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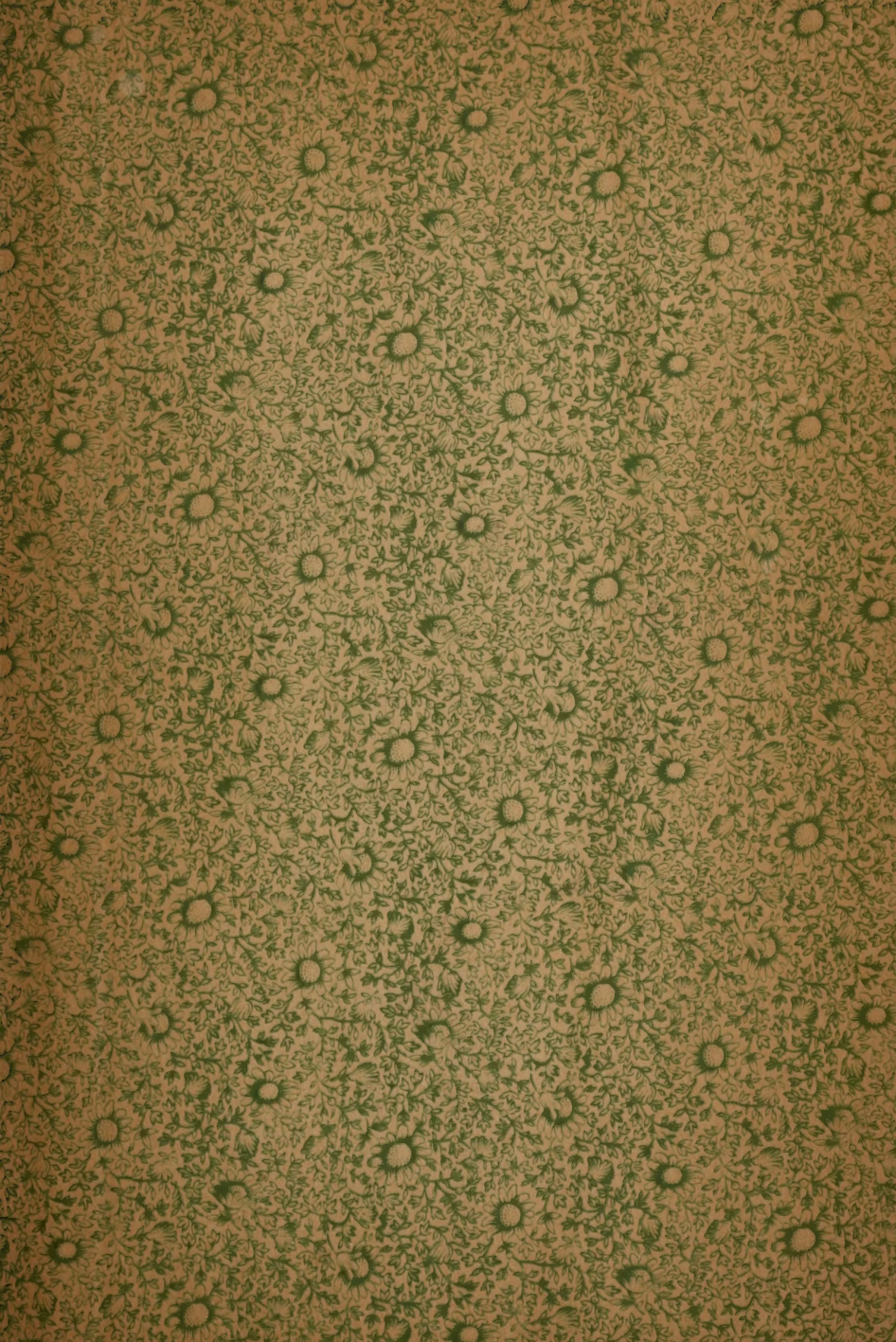
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THE DENTAL REVIEW.

DEVOTED TO THE ADVANCEMENT OF
DENTAL SCIENCE.

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VOL. II.

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THE
DENTAL REVIEW

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J. W. WATKINS

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THE DENTAL REVIEW.

VOL. II.

CHICAGO, JANUARY 15, 1888.

No. 1.

ORIGINAL COMMUNICATIONS.

OILS IN DENTAL SURGERY.*

BY A. W. HARLAN, M.D., D.D.S., CHICAGO, ILL.

Oils and fats, before they reach the dentist, to lubricate a motor, disguise the taste of a drug, or give a keen edge to an instrument on a whetstone, pass through many processes in rendering, expression, or distillation. It is not, however, of the processes of their extraction that I purpose speaking to-night, as much as it is of their use and value in dental surgery. Oils are either fixed or volatile, animal, vegetable, or mineral. The mineral oils have a very small place in the practice of dentistry. Oil of Shale and petroleum, vaseline, etc., are all useful in the laboratory, and for heating and lighting, as well as for lubricating and cleansing purposes. It is presumed that no special directions are necessary for their particular uses by the dentist. The principal animal oils are seal oil, whale oil, cod liver oil, butter, tallow, or suet, lard, or lard oil, Dippel's animal oil, spermaceti, from the brain of the whale, and Chinese wax. The heavy vegetable oils are palm, olive, cotton seed, colza, almond, castor, linseed, and cocoanut. Dippel's animal oil may become, through its combination with iodine, a very valuable adjunct in dental practice. The drug known as iodol, is composed of Dippel's oil and iodine. This ethereal oil is obtained from the dry distillation of bones and other animal matters, although Dippel prepared it originally from dried blood about 1711. It is sparingly soluble in water, the proportion of the oil dissolving in water being the same as creosote 1-80.

*Read Before the Chicago Dental Society, November, 1887.

Its practical value in dentistry is limited to the preparation of iodol. Creosote, the oil of wood tar, is an article largely used by dentists. In many cases, dentists themselves are in the habit of saying, "I use creosote, or carbolic acid." Very many authors of works on materia medica, in summing up the medicinal properties of creosote and carbolic acid, in effect, state that their uses are the same. Formula: $C_8H_{10}O_2$ Gorgas. Guaiacol $C_7H_8O_2$ —U. S. Disp. The real formula of creosote has never been obtained, unless you add the combined formula of creosol and guaiacol, which would read $C_{15}H_{18}O_4$. Creosote, it is said, will coagulate albumen and whiten the mucous membrane. It will not do the latter, and, as a coagulator of albumen, it is very feeble. It will precipitate gum and albumen, but it will not gelatinize collodion. It is also stated to be insoluble in glycerine, which is not true in many cases, as German creosote is soluble in glycerine. Morson's is not. English creosote is not always made from beech-wood, it being generally extracted from Norway pine. This wood, too, contains oil of turpentine, which explains the insolubility in glycerine. The slightest addition of carbolic acid to wood creosote, freed from oleum terebenthina, renders it soluble in glycerine. It is soluble in alcohol, ether, fixed and volatile oils, carbon bisulphide, and glacial acetic acid. It will take up ammonia, but does not combine with it. Creosote is not a chemical disinfectant, as when brought in contact with sulphuretted hydrogen, or phosphuretted hydrogen, it does not break up these compounds. The acetic fermentations are the only ones which offer any opportunity for creosote to be broken up chemically, and form new compounds. Its true value in local application is as a preservative, when exhibited alone. It is not an absorber of oxygen, hence it can not be used for disinfecting purposes, as can oil of turpentine. Creosote and iodine in saturated solution, when used as a disinfectant, owes its value to the iodine. Creosote, by its odor, overwhelms many mephitic odors, but they are simply held in abeyance—not destroyed. Creosote as a germicide, is weak, although one part in two hundred is stated to be fatal to the microbe of pus. This I very much doubt. Pure creosote is stimulant, astringent, and sedative. Inhaled, it is soporific. In dental surgery, combined with other oils, its stim-

ulating properties are increased. It will check vomiting, and it allays the pains of burns and scalds.

Turpentine. Turpentine is not much used in dental surgery, and on this account I will refer to it to-night. The great similarity of all essential oils to turpentine, minus their characteristic odors, is the reason I have chosen it to represent the great body of terpenes. The oils of cloves, camphor eucalyptus, cinnamon, caraway, cajeput, thyme, amber, camphor, gaultheria, peppermint, lemon, and several of the remaining essential oils, have in gross, the single or double formula of $C_{10} H_{16}$, or $C_{20} H_{32}$, or $C_{10} H_{16}$, O or O_2 . The extra oxygen being a component in proportion, as the oil has an affinity for it. The oils belonging to the volatilia, or essentia, are oxidizers, and always capable of forming new compounds, hence they are disinfectants, from the chemical standpoint. They are all prone to combination with mineral acids, so that camphors are easily formed. All camphors are soluble in alcohol, and are vaporizable at ordinary temperatures. This will explain why many foul odors and infectious matters are decomposed and disinfected by the essential oils. They do not, as creosote and carbolic acid will, smother, and hold in check by their own powerful odors infectious effluvia, to become virulent again at the first opportunity; but they, in addition to their several odors, combine with others, chemically, through the extra atoms of oxygen, and the freshly deposited vaporizable camphors, and form new and inert compounds. This will be seen to be the unexplained reason why the simple compound of 1-2-3 is so valuable. It will also tell why, when essential oils are added to creosote, iodine and other drugs of this nature, that there is an added potency. This potency is always available, on account of the non-coagulation of albumen in places where it would be fatal to the object sought, in not coagulating it.

The practical knowledge of the proper use of the essential oils in dental surgery, is only dawning because the study of their properties and uses has been for laboratory workers a by-play. I consider the turpentines, as a class, of the very greatest importance, to secure, in their proper place, stimulants, astringents, anodynes, obtundents, and last, but not least, agreeable and certain disinfectants. They are not only valuable, but available

for use, without the danger of using poisonous quantities. It matters not that they are to be used without much dilution, as any or all of them are sufficiently potent for the destruction of bacteria in a strength of from five to ten per cent. Then, again, they may be used in full strength on living pulps or the mucous membrane of the mouth, in abscesses, in roots of teeth, and do no damage to the adjacent healthy tissues. By judicious combination, any and all conditions may be met, from the dressing of a surgical wound to the checking of an apthous condition. From the foregoing, you can see that, as the known essential oils are based, chemically, on the oleum terebinthina, we may proceed from it to formulate a system of oral therapeutics, if need be. This necessity does not exist, however. Turpentine would be valuable, if it possessed no other property than that of dissolving resins and fatty matters, to say nothing of rubber or caoutchouc. In general surgery, its uses are varied—likewise, in the practice of medicine. It is, as a disinfectant and deodorant that we have need of it in dental surgery. It possesses a potency which a week or two will not destroy. If a root of a tooth is stopped with a roll of cotton dipped in it, and poorly protected with gutta percha or sandarac varnish, the cotton will remain free from putrescence many times longer than when creosote or carbolic acid have been used. Its potency will outlast iodoform, iodol, or any other substance which I have used in such cases. This property of not being dissipated by the secretions of the mouth, places in the hands of a dentist an agent which permits of the use of a temporary dressing, when a patient may be on the eve of undertaking a journey of uncertain length. On this account alone, it is to be commended. I do not like its odor, but the addition of an essential oil will disguise it. It is the remedy *par excellence* under the name of tereben, for a root dressing, when you do not wish to fill at once. It is stimulant, antiseptic, and a disinfectant oxidizer. Microbes do not thrive in it. It is slightly soluble in water, but freely so in alcohol and ether. Terpinol, its camphor ($C_{10}H_{16})_2H_2O$, with an odor of hiacynth, has a future before it in antiseptic surgery, if it can be made cheaply; at present however, it is expensive. The next time you wish to disinfect a foul root in a short period, try it. Its isomer, terpin-hydrate I am now submitting to crucial clinical tests, but at present prefer to say nothing of it.

PUTS!

BY W. IRVING THAYER, D. D. S., M. D., BROOKLYN, N. Y.

I do not believe the etiology of dental caries so much a mystery as some would suppose.

I do not believe it possible to keep the lime salts intact in tooth structure and free from holes, if one allows food or foreign substances to become acidulous and *bore* holes into the carbonate and phosphate of lime of petrous tissues.

I do not believe that one can keep the microbes or other little devils away from attacking, eating, disintegrating and destroying the soft solids of the dental organs, after one has dissolved away from these aforesaid soft solids their calcareous matter.

I do not believe microbes have any love for attacking calcareous matter, pure and simple.

I do not believe calcareous matter in tooth structure can be expelled in any other way than by attrition and the chemical action of a solvent, to-wit, an acid.

I do not believe the researches of the histologist, nor the studies of the chemist, either, *alone*, can fully account for the waste of dental tissue.

I do not believe one can prevent vinegar or other acid from eating away the carbonate of lime—marble—if the acid is allowed to drop, drop continually on the marble and no neutral agent is used to prevent it.

I don't believe that acids will treat the lime salts of tooth structure any more considerately than they will other bases found in inorganic compounds. Marble.

I don't believe any one can long enjoy their dental organs if, during their formation, they—the teeth—have been *starved to death*.

I do not believe that the profession has given this important matter, hinted at in the last "don't," a millionth part of the consideration that its *tremendous importance demands*.

I do not believe but that Rigg's Disease is pretty well understood and very successfully treated. At least by some men.

I don't believe the stopping of a cavity of decay in a tooth—very perfectly, if you please—always stops that specific spot from further decay.

I don't believe a cavity of decay can be well filled, where carelessness is present and judgment off on a vacation.

I don't believe that any operator is thoroughly honest who will allow the least vestige of disintegrated enamel or broken down dentine, around the periphery of decay.

I don't believe that all operators know that they can ruin any gold by over heating it, so as to melt portions of its surface, thereby making it *harsh and knobby*.

I don't believe that tin foil is used as often as it ought to be in soft, frail teeth.

I don't believe that tin foil is any better at the cervical borders of cavities, than is *soft, unannealed* gold.

I don't believe it to be wise to use annealed gold at the cervical border of *soft* teeth.

I don't believe in putty work, or putty fillings, even for soft teeth.

I don't believe gutta-percha to be of that order, or class.

I don't believe oxy-cements, such as oxy-phosphate and oxy-chloride of zinc, to be any better, if, indeed, as good as moderately hardened putty.

I don't believe that one case out of a hundred, in which the cervical borders are involved and "putty"—the zincs—has been used, but that it dissolves out *very soon*; and the poor, outraged, innocent patient finds that these effeminate zincs have dissolved out and a hole bored straight for the pulp.

I don't believe that there is a man who lives upon the face of the earth who can truthfully say that these "putty" fillings are positive and sure *stops*, at the cervical borders for any reasonable time, say six to eight weeks.

I don't doubt but that many will say "that I am mistaken," and—put it mildly—"a crank." Don't doubt it at all. But let the writer assure the reader, that the party of the first part is bound to be on the safe side of the "crank," *every time*, and is willing that the "other fellow" should play the deuce, by packing effeminate nonsense into his patients' teeth.

I don't doubt but that an A number 1 amalgam, and a hard and reasonably durable gutta-percha filling for temporary teeth, are splendid substances to stop such teeth from decaying. But, very light tin foil should not be forgotten, packed *a la* Samson.

I don't believe in "plastics," if by that the zincs are meant. Putty!

I don't believe that any man does full justice to his patient who deliberately kills an exposed pulp in said patient's tooth. To put it mildly, *a la* J. B. Hodgkin, it's "damnable." He uses the adjective but "don't" concur in the above sentiment or "put."

I don't believe Dr. Hodgkin when he says—"Any tooth which has ached from pulp exposure, that pulp will die inside of four years, no matter how treated, capped or doctored." I don't believe him for this reason: I know a man who has more than two score of such cases, even when there was marked pulpitis present, and he has saved *every one* of those pulps, and many of them a good many more than "four years." *Seeing, feeling, knowing, one KNOWS!*

I don't believe that every pulp and nerve can be saved; but in the large majority of cases it is the fault of the person who stands upon the floor, and not with the pulp or *age* or *temperament* of the patient. A little strong, if not impudent, yet facts are facts, nevertheless!

Any pulp that is exposed only so far as not to be actually visible—having *over* it softened dentine—*can not* be set down upon, however *lightly*. The same is true, many times true, that an actually visible pulp can not allow *any* foreign substance to *touch* it. Then, again, how much more rebellious would an exposed pulp be, where there was visible exposure and inflammation, *pulpitis*? In *none* of these conditions, just cited in this paragraph, will a pulp tolerate pressure, or even *light contact*, and remain happy and contented.

Under such conditions it is agreed with our dear friend Hodgkin that the "pulp will die," in a much less time than "inside of four years." But, it *does* "matter how" first "treated, capped and doctored."

It does matter very materially!

Where an operator can *see*—and in many cases where he can not have full, clear vision—and finds a clearly exposed pulp, that has ached for weeks, with well marked pulpitis, even hypertrophy, *he can save that pulp alive*. Not by setting down upon it, though.

The first thing is to reduce the hypertrophy by excision, if of large dimensions. Dress with a pledget of cotton wet in carbolic acid containing a five per cent addition of oil of cloves, creosote or chloroform. This is designed to partly exclude the air, and the first two dressings will assist to form a scarf cover to the pulp.

Second step, is to assist in relieving the vascular portions of the pulp from blood pressure, which is popularly termed "*itis*."

The same condition will be found present in the vein and artery, amounting to stasis in their anastomosing capillaries, as exists in acute febrile conditions. Almost any drug, in its pure effect, will produce fever; a specific fever I mean, differing from another shade of fever produced by another drug.

The most common drugs that will assist the pulp to catch its breath are aconite, veratrum $\frac{1}{2}$ viride, gelsemium, or belladonna. Three drops of the third centesimal dilution of aconite in a half tumbler of water, two teaspoonfuls once in two hours, or every hour in alternation with the third trituration of mercurius corrosivus or vivus, in grain doses, will very speedily, as a usual thing, bring acute pulpitis to a happy ending.

Since acute pulpitis is the rule, the chronic condition need not be mentioned in this paper. The more acute the symptoms, the less need there is for the mercurius. This works well. Aconite every hour for two hours, and on the third hour give a grain dose of mercurius. No remedy tends to thwart suppuration and go for microbes as does mercurius corrosivus, third centesimal trituration. Indeed, so potent is this latter remedy, that one can almost universally prevent tonsillitis and their suppuration by *early* painting these glands with the first decimal trituration. And, in the first starting of common acute coryza — nose cold — nothing can equal the *second decimal* trituration of mer. cor. snuffed up the nose three or four times a day. It's useless to fall into the error that "if a little is sweet, a good deal must be sweeter." The *third centesimal* trituration for preventing the pulp suppuration, is better than a lower trituration.

If pulpitis continues, then periostitis supervenes, which ends in alveolar abscess, and then who is happy?

After the acute symptoms have been controlled, cap and fill. But how? Many times, very many times, we do not wait for the acute symptoms to cease, but go ahead and finish our work, so

familiar have we become with our tools. We speak of this with *humility* and *not in boasting*. No! far from it!

But, how “cap and fill?” It has been said that a live pulp in a tooth would brook no insult; will not allow anything to touch it in a *permanent* operation; and this foreign contact is *why* so many pulps die. At the same time I beg to lay stress upon the constitutional treatment.

It is our custom to construct a “cap,” a concave cap, saucer shape, dishing on one surface, convex or plain on the other. Fit the cap so that its periphery will bear beyond the horns or walls of the pulp chamber. This can be quickly done. Then press upon the cap to see if the patient can detect any pressure upon the pulp. If not, all right. I then have balsam of fir dissolved in chloroform, which I keep on hand all the time, — it is understood that the dam is used where it can be, — and soak the cavity moderately, and then replace my saucer-shaped cap with the concave surface *towards* the pulp. This dissolved balsam of fir is very adhesive, and sticks the cap. Seldom do I pack gold on this, but gutta-percha and amalgam. I frequently hold the cap with a delicate needle-point excavator and pack around it a little gutta-percha, the better to hold my cap and prevent subsequent movement.

By this means the pulp has room in which to live, with no risk of being *pressed upon*.

The caps can be made of thin gold or silver, about number thirty gauge, and in this shape, round or oblong, of various sizes. All that is necessary to do to concave them, is to lay them on a piece of hard wood or over lead, and strike upon them with a broken excavator and light hammer. Rarely a week passes that I do not set one or more.

These gold or silver caps have sufficient rigidity in themselves, so as to prevent them from being compressed upon the pulp. Substances like a section of goose quill are liable to become *depressed* upon the *pulp*.

Any one who will give this matter a little attention, can treat constitutionally these inflamed pulps, with great success and sat-

isfaction to themselves and a thousand times more so to many, *very many, appreciative and grateful patients.*

89 South Portland avenue.

[NOTE.—We give room to this communication because it may stimulate some one to answer it, who can not agree with the author. We confess that there are many statements in the paper not clearly explained, but the author is the responsible party and we expect him to defend his beliefs in a subsequent article.—EDITOR.]

RESINS AND OLEO-RESINS.

BY JAMES STEWART, D. D. S., CHICAGO, ILL.

These substances are generally found together, and occur in plants. The resins of the U. S. P. form a class of preparations made by extracting the resin from the powdered roots or leaves of the plant with alcohol, and then precipitating the resin by adding water, which unites with the alcohol setting free the resin. Resins are also the solid residue left after the distillation of the volatile oils from the oleo-resins. They are like the camphors and differ from the fats and oils in being solid and brittle. They are not volatile.

Resins are somewhat antiseptic and it is for this reason that beer casks are lined with pitch. They are probably hydro-carbons which have become oxidized. Resins are solid, brittle substances which when broken show a clear shining surface. When perfectly pure they are white and inodorous; but as usually found in commerce they are of a yellowish color having a peculiar faint odor and a bitter, acrid taste. They fuse readily and unite by fusion with the fixed oils and wax. They are decomposed at higher temperatures. They are insoluble in water but are soluble in alcohol and ether. The resin in the alcoholic solution may be thrown down by the addition of water. Nitric acid converts the resins into an artificial tannin.

When the oil of turpentine is distilled from common turpentine a resinous substance is left; this is the common yellow resin, known in Europe as colophony, and which in this country is commonly called rosin. When pure it has a beautiful, clear, yellow

color; but as usually seen, it is a brownish yellow. The brown color is due to impurities and too high a temperature in melting. When boiled with alkaline solutions it makes what are known as the rosin-soaps; these are the common yellow soaps. Common rosin or colophony has been administered internally, but is never given now. Its chief medicinal use is as an ingredient in plasters and ointments. It has the property of preventing the oxidation of fatty substances and for this reason is useful in ointments.

Mastich is a resinous gum which exudes from the trunk and large branches of the Lentisk tree, a native of all the countries bordering the Mediterranean sea, but is chiefly obtained from the island Scio, where the tree is cultivated. Incisions are made from which the gum flows and hardens in yellowish tear-shaped drops. It is composed of two resins, the Alpha and Beta. About 90 per cent. of mastich is soluble in alcohol; this portion is the Alpha resin and because of its acid properties it is also called mastichic acid. The remaining portion is called masticin and is a tenacious, elastic resin. Mastich is wholly soluble in ether, chloroform and oil of turpentine, but is insoluble in water.

Sandarac is a gum having many of the characteristics of mastich. It is an exudate from an evergreen tree in North Africa; it is almost entirely soluble in alcohol and entirely so if the alcohol be absolute; it is soluble in ether and slowly dissolves in oil of turpentine.

As before stated, the addition of water to an alcoholic solution of any resin immediately precipitates the resin. It is for this reason that an alcoholic solution of sandarac is used by dentists to saturate cotton to put into cavities in teeth. As soon as the water of the saliva comes into contact with the alcohol they unite, setting free the resin which is thus distributed in minute particles throughout the cotton, making it impervious to fluids and food.

The odor and flavor of black pepper, is due to a volatile oil and resin. The common capsicum plaster is made with the oleo-resin of pepper. Arnicein, the chief active principle of arnica, is a resin. Cannabin, the active principle of cannabis indica, or indian hemp, is a resin; prepared by exhausting this principle from the dried tops of the indian hemp, by maceration in alcohol. The alcohol is then evaporated, leaving the resin. The taste of cannabin is warm, bitter, and acrid; it has, when heated, a fragrant odor.

The fluid extract of *cannabis indica*, which is the resin dissolved in alcohol, is a powerful narcotic, resembling opium, but is unlike opium in this—that it does not lessen the appetite, nor check the secretions. It causes exhilaration and intoxication, and, in its subsequent action, drowsiness and stupor. It has little effect upon the circulation. The fluid extract is used often as an obtunder of sensitive dentine. It is not so certain of action as opium, but may often be used to advantage, where that drug is contra-indicated, because of its action on the appetite and secretions.

Shellac is a resinous substance, obtained from several trees in the East Indies.

As first gathered, it is taken from the tree still covering the small twigs from which it has exuded. It is melted from these, and made into thin sheets, and marketed in this form. It is generally used in the alcoholic solution.

The resin of *podophyllum*, or may-apple, is prepared from the root.

This resin is commonly known as *podophyllin*, and is a slow, but certain, cathartic and purgative; and causes a bilious discharge.

GUM RESINS.

These are gums which have incorporated with them a resin, and sometimes a volatile oil. The only one of interest to the dentist is *myrrh*, the tincture of which is used as an ingredient in mouth-washes. It is an exudate from a small tree in Arabia, which grows with the *Acacia*. It is partially soluble in water, alcohol, and ether; the alcoholic solution remains clear, when water is added. It is composed of 25 per cent of a volatile oil, 23 per cent of a resin, 46 of soluble, and 6 of an insoluble gum. *Myrrh* is a stimulant tonic, and somewhat of an astringent.

OLEO-RESINS.

These are volatile oils, holding in solution one or more resins. They were first included in the U. S. P. in 1860, having formerly been classed with the fluid extracts. They consist of principles which are extracted from the powdered roots, or leaves, of plants with ether, and which remain in a fluid, or semi-fluid, condition, after the evaporation of the ether.

The oleo-resins have the property of remaining unchanged,

differing in this respect from the fluid extracts, which have to be kept in alcohol to prevent decomposition. There are also a number of oleo-resins which are obtained by incision of trunk and branches of the conifers. Of the first class there are none of interest to dentists and but few which are officinal. Of those obtained by incision, of the fir, pine, hemlock and larch trees, the most important is terebinthina or white turpentine—Thus Amer. This oleo-resin is obtained from the *pinus palustris* and other pines in many parts of this country and Europe; but it is chiefly found in this country in North Carolina, Virginia and other southeastern states. The bark is removed in strips, the turpentine exudes and is removed twice or three times a month.

It is a yellowish-white, varying from a semi-fluid to a hard consistency according to temperature. There are many varieties having the same characteristics, as the White, the European, Canada, Venice and Chian turpentine.

The turpentine is all true oleo-resins; they become thick and hard with age because of volatilization of the oil and oxidation. Each yields a volatile oil called oil of turpentine or spirits of turpentine. When taken internally the oil is stimulant, diuretic and laxative. It is removed principally by the kidneys, and if much is administered it is a violent irritant to those glands. The turpentine is commonly used as rubefacients and counter-irritants.

Some of the resins and oleo-resins are used in the manufacture of plasters. The most common of these is the *Emplastrum Resina*, or common adhesive plaster; it is composed of common resin 14 parts, lead plaster 80 parts, yellow wax 6 parts; these are melted together with gentle heat and spread thinly over a muslin cloth. This is the basis of many plasters. Capsicum plaster is prepared by spreading upon a sheet of resin plaster a thin coating of oleo-resin of capsicum. This plaster is a counter-irritant frequently used by dentists.

A NEW CROWN.*

By C. S. CASE, D.D.S., M. D.

You are all doubtless acquainted with the English pivot tooth made by Messrs. Ash & Sons. You will remember that it is supplied with a platinum tube, which passes through its center in a vertical direction. This, substantially, is what I have used for the past four or five years for producing an artificial tooth crown, which, for simplicity of adjustment, combined with mechanical requirements and numerous possibilities for the protection of the root, will, I think, commend itself to others.

The fact that the tube in the English tooth is not quite large enough for the purposes of my method, has obliged me, thus far, to use teeth of a far inferior grade; but which, as far as the fittings are concerned, have given great satisfaction.

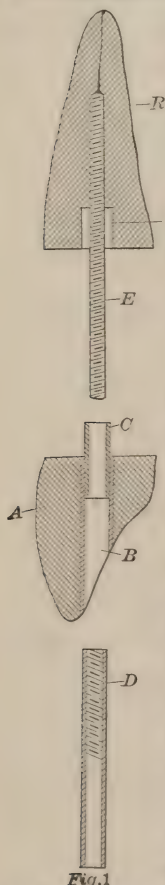


Fig. 1.

Fig. 1 represents a vertical section of the entire portions of the crown displaced. E is a screw-threaded post, seated in the root R. A is a porcelain tooth-crown, possessing the tube B. C is another tube—preferably of platinum—which is soldered into tube B, forming a shoulder at one end, and, projecting from the tooth at the other, is received into the annular cavity *r*—the latter device being intended to give a longer and more rigid bearing to the crown. D is an internally threaded tube, which, screwing onto the post E, passes into tube B, and, being received against the shoulder, the parts can be firmly drawn to position, as shown in Fig. 2.

It is presumed that the operator will be supplied with drills, taps, posts, and tubing of such an exact size, that the parts will work together with mechanical precision. The tubing can be made by cutting narrow strips, two or three inches long, from platinum plate of the proper thickness, and, passing them through a draw-plate until their external diameter will admit them into tube B of the tooth; after

*Read at the Clinic of the Chicago Dental Society, December 14, 1887.

which they should be soldered with pure gold. The internal diameter of the two tubes requisite, will, of course, be regulated by the thickness and width of the strips before drawing — the one (C) to slide over the post, and the other (D) screw-threaded, so as to fit it, on the principle of a nut. The thread should be cut only a short distance into the tube at each time of using. If the How post is used, the same tap will answer to cut the thread for the nut.

My original design calls for a post having a cone-shaped screw at one end — coarsely and sharply threaded when it enters the root, the base of the cone being equal in diameter to the requirements of the annular cavity r ; at the other end, straight and finely threaded, where it engages with the nut. This, by its maximum diameter, will afford the greatest possible strength in proportion to its size, and possess threads in keeping with the requirements of the material with which it is intended to engage.

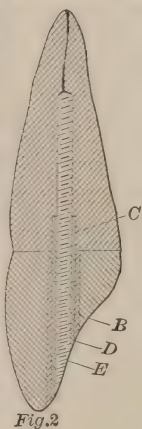


Fig. 2

The first step in the operation proper, is to dress off the end of the root, so that its exposed surface shall be a little below, but parallel with, the festooned border of the gum (See Fig. 3), and to fit the selected tooth to it, so that, when in position, there will be no rocking movement. While holding the crown in place, pass a drill, or other suitable instrument, through the tube, and mark on the end of the root the starting place to drill for the post. If the root canal is not in the proper position to receive the post, or is enlarged by decay, or otherwise, it should first be filled with gold, or amalgam.

Drill and tap for post, and ream for annular cavity r . After the post has been fixed in the root, it may be necessary to bend it slightly, in order that it pass through the center of the tube B.

Now, to finally prepare the crown, insert tube C a short distance into the cervical portion of tube B, and imbed the crown in plaster and asbestos, leaving exposed the part where the tube enters. Place a minimum proportion of some easily flowing, hard solder next to the tube, and apply heat from the under side, until it disappears between the

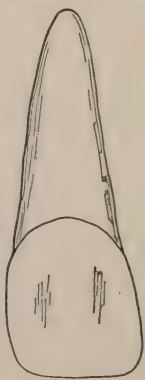


Fig. 3

tubes. (I have even used soft solder for this purpose, but the use of the other is very easy, and more reliable.)

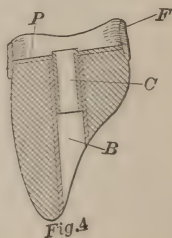
Cut off the tube the proper length for the cavity *r*, and fit the parts together, by screwing on the coupling tube D, which you will have prepared, as directed.

Before the final adjustment, apply gutta-percha, or Hill's Stopping, to the end of the root or crown, thoroughly warm the latter, and immediately bring the parts firmly together.

Finally, cut off the projecting ends of tube and post, and polish the surface.

I usually make a narrow groove on the end of the root, near its peripheral edge. When the root is good, and the joint between the root and crown comparatively perfect, I have found Hill's Stopping to remain, perfectly protecting the root for years.

The reason why the ordinary cheap crown fails, and early becomes a disgusting thing to both patient and operator, is because of decomposing organic material, that almost invariably will work its way between the joints, with ultimate decay of the root. This is mainly due to the large mass of imbedding material which they require—usually amalgam—that is not held firmly in place until it hardens, together with the general instability of the fittings, which admit of a slight movement during mastication, with final imperfection of the joint.



Every root that is worthy of a crown may be restored, or have its exposed end completely and securely covered with tin, or even gold, by first slipping onto it a quickly shaped band of thin aluminum, and over this the thinnest rubber dam; or, the rubber dam may first be put onto the band—lodging in a groove—and then the band put onto the root.

If it is desired to surround the root with a band, in connection with this crown, it will be found far easier to do so, and at less expense, than is required to produce the Richmond.

Dress off the root, and fit the band the same as for the Richmond crown. Adjust the crown and all its fittings while the band is in place. Remove both together, or properly, readjust after removal, and fit a piece of thin platinum plate (See P, Fig. 4,) to the end of the crown—the band F surrounding it, and

the tube C extending through it. Invest, and solder to band and tube.

With this method of fitting the crown, it will be necessary to allow for the interposing plate; also, there will be no need for the tube C to enter the root.

Again, there is another and much easier way presented for using the band, which is as perfect for protecting the root, and possesses the advantage also of not having the band in sight.

Dress the root the same as described at first, and make band of very thin platinum plate. After it is fitted to place, trim off the projecting edge even with the dressed face of the root. Bend or burnish a piece of platinum plate (also very thin) against the end of the root, its edges extending beyond the band. Remove band, solder the two together, and finish. Cover the inside of this cap with a thin layer of gutta-percha, and return to place. Warm with hot blast, and while holding it firmly in position with a fitted wooden instrument, burnish the thin band tightly against the sides of the root.

Now fit the crown, as at first.

I have not entered into minute details, or described all the ways that may be resorted to with this crown, for the permanent protection of the root, but have endeavored to place before you a crown that is not confined to any one method of procedure, the basis of which is a simple mechanical coupling contrivance, by which I secure important results in the way of strength, permanency, and ease of adjustment.

PROCEEDINGS OF SOCIETIES.

THE CHICAGO DENTAL SOCIETY'S CLINIC.

MR. PRESIDENT: Your committee appointed at the July meeting, to arrange a clinic for this society, begs to offer the following report: The clinic was held at the Chicago College of Dental Surgery on Wednesday, December 14, 1887,—the entire day, from 9 a. m. to 6 p. m., being occupied continuously.

Invitations to operate, or otherwise to contribute to the practical nature of the meeting, were sent to fifty-four gentlemen.

Thirty-six of these accepted, and only three failed to fulfill their pledges.

But eight of the clinicians were non-residents, which was in accord with the purpose of the committee, viz., to make the meeting a local affair.

The programme of the day consisted of operations, demonstrations, and exhibits, relating, for the most part, to operative dentistry; prothetic dentistry was not entirely ignored, however.

Briefly catalogued, the features of the day were:

Scaling and cleaning teeth.

Fillings of gold; non-cohesive; cohesive; the two combined; sponge; Steurer's; and gold and tin.

Fillings of amalgam, both copper, and alloy being used.

Fillings of cement.

The forms of mallet included the electric, hand, engine, and finger mallets.

Pulps were capped.

Root canals were filled by several different gentlemen.

The great value of electrolysis in dental therapeutics, was admirably shown by two of our members.

Teeth were extracted with local application of cocaine, and under the influence of nitrous oxide.

In implantation, no suitable cases were presented for the operation, but eight patients, who had been previously operated upon, were present for inspection.

An operation for caries of the maxilla.

An interesting case of corrected dental irregularity was present, and a quantity of regulating appliances and casts of irregularities were shown, which yielded much benefit to the student of orthodontia.

A number of interesting and instructive pathological and anomalous specimens were shown by different members.

A curious artificial denture, over a century old, was on exhibition. This, and many other specimens, merit a permanent and secure repository.

The essentials of a case of bridge-work were executed by Dr. Whaley.

Among the instruments and apparatus deserving of honorable mention, were Dr. Taggart's corundum disk and point maker,

Dr. Magill's improved blow-pipe, Dr. Whitefield's electric engine, Drs. Freeman's and Swasey's clamps, and Dr. Gardiner's storage battery, used instead of permanent battery, to furnish electricity for dental purposes.

Dr. Harlan explained the properties and application of an assortment of drugs.

Dr. Davis conducted a microscopical exhibition of highly instructive slides, throughout the greater part of the day; and, at four o'clock, p. m., he displayed many on a screen, with a stereopticon, accompanying the same with a descriptive lecture. This constituted an important and long to be remembered feature of the day.

At four o'clock, p. m., Dr. C. S. Case of Jackson, Michigan, delivered a lecture on artificial vena, and also read a paper on a new porcelain crown.

A valuable paper, describing the manner of making porcelain fillings, from the pen of Dr. E. C. Moore of Detroit, was read at this time.

There was a moderate attendance during the early morning hours, but later the infirmary was thronged, and continued so throughout the day. Roughly estimated, there were 200 dentists in attendance, exclusive of students. This number included visitors from Michigan, Indiana, Missouri, Iowa, Minnesota, and Wisconsin.

The following is a detailed description of some of the operations, methods, and means, submitted without any attempt at criticism — mostly in the words of the clinicians themselves:

Dr. J. G. Reid demonstrated the method of filling root-canals with chloro-percha and gutta-percha points. The case was a left upper first bicuspid. The tooth was not seen by the operator previous to the clinic. A careful examination revealed no soreness either from percussion or occlusion. The rubber-dam was adjusted, and the temporary plug of cotton and sandarach varnish removed. The cavity being situated on the mesial surface of the tooth, made the canals very accessible.

Two well defined canals were found, one being filled with cotton, the other open, but in an apparently healthy condition; upon removing the cotton (which was in the buccal canal) a slight watery discharge tinged with blood followed. No odor was de-

tected from the cotton other than the medicine, which proved to be eugenol; the discharge was soon arrested by introducing alcohol into the canals and evaporating it with the hot air syringe; this process was repeated four times, after which the canals were found to be dry and in condition for the reception of the filling material.

A chloro-percha solution of the consistency of thick cream was pumped into the buccal canal by means of a piano-wire broach, until a slight sensation of pain was experienced by the patient; this was followed by a cone made at the time, of pink base-plate gutta-percha introduced from the point of a canal plugger; after being moistened in the chloro-percha solution, this was forced into the canal until slight pain was produced, which continued for two or three minutes. The palatine canal was treated in the same manner and with the same results so far as sensation of pain was concerned, the pain being evidence that the filling had reached the apex. It may be stated that the root-canals in this case were unusually large and very straight for such a tooth. The tooth was filled permanently at the same sitting by one of the operators present.

Dr. D. M. Cattell demonstrated* the scaling of teeth. The case was an Irish boy, aged eighteen years, whose teeth had never been cared for. They were thickly incrustated with calculus at gum margins, and discolored in front; they were only slightly carious.

The greater bulk of tartar was removed with a spear shaped hook or hoe—catching under the scales of tartar at or under the margin of the gum—the force being exerted toward the cutting or masticating surface of the teeth. These instruments vary in size and slightly in shape, some being very thin and blade like, with the hook very long and slender, others short and heavy set. He usually prefers the hooked instruments to the chisel. A patient seems to lose confidence in the ability of the hand to stop at the right moment, when you are *pushing*, or the force used to remove the scale is exerted toward the point of the root. After all scales of tartar were removed, rubber points—saucer shaped and cup like—were used in connection with the engine, dipped in peroxide of hydrogen and pulverized pumice stone, polishing the crowns and necks well up under the gum.

If thoroughly done the patient is benefitted more by this, than by almost any other operation upon the natural teeth—dirt, rot, cess-pools and stench, are all removed. “An open Sepulchre” is purified, the thing “next to Godliness” remains.

The work is nasty, it taxes nerves, muscles and stomach; charge well for it, or we will not have done our whole duty. One’s self respect demands that a liberal remuneration be had.

Dr. Truman W. Brophy operated for caries of the superior maxillary with the aid of cocaine as a local anæsthetic. He exhibited a case which had been operated on a few weeks previously, having removed an osteoma from the superior maxillary. He also had an artificial denture, which is an excellent specimen of the skill and workmanship of dentists who lived before our day. A block of ivory was carved to fit and rest upon the alveolar processes of the upper and lower jaws; in each piece were reproduced by the chisel of the carver, the second bicuspid and the first and second molars. The anterior six teeth were the crowns of natural human teeth with gold pivots riveted into the ivory. The reproduction of the sulci and cusps in the ivory molars and bicuspids was almost perfect. Decay had attacked all of the ivory teeth in a manner usual to caries. The dentures were retained in position by means of spiral springs.

Dr. E. D. Swain filled with gold a labial cavity on a central incisor, with the aid of Dr. Freeman’s clamp. The application of this clamp, the preparation of the cavity, introduction of the gold and final finish, leave nothing to be desired and could not have been more perfect.

Dr. Louis Ottofy presented for inspection eight cases of Implantation of from one to eleven months standing, and reported on implanted cases, as follows: Total number implanted, 17; successful, 13; failed, 4. The eight cases on exhibition proved of much interest.

Dr. Edward K. Wedelstadt of St. Paul, Minn., extracted an upper right third molar, with the use of a 4 per cent. solution of cocaine as a local obtundent. The cocaine was injected on the palatal surface of the tooth, the point of the syringe being pressed up toward the apex of the root, the quantity injected was, in the words of the operator, “a big dose,” and the

patient claims to have felt no pain during the extraction of the tooth.

Dr. Garrett Newkirk demonstrated the usual method of filling root canals with chloro-percha and gutta-percha points. He also exhibited a number of interesting casts and appliances for the correction of irregularities, the principal feature of which consisted in the application of the Coffin piano wire system.

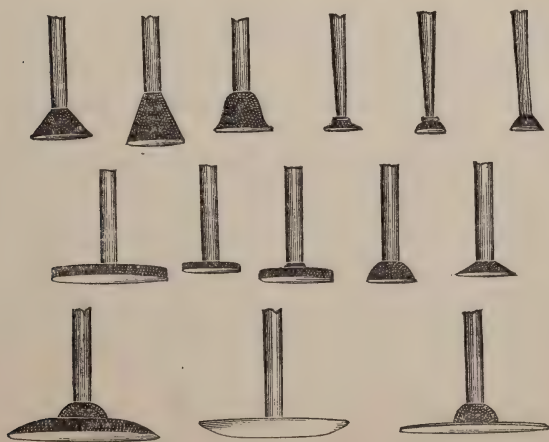
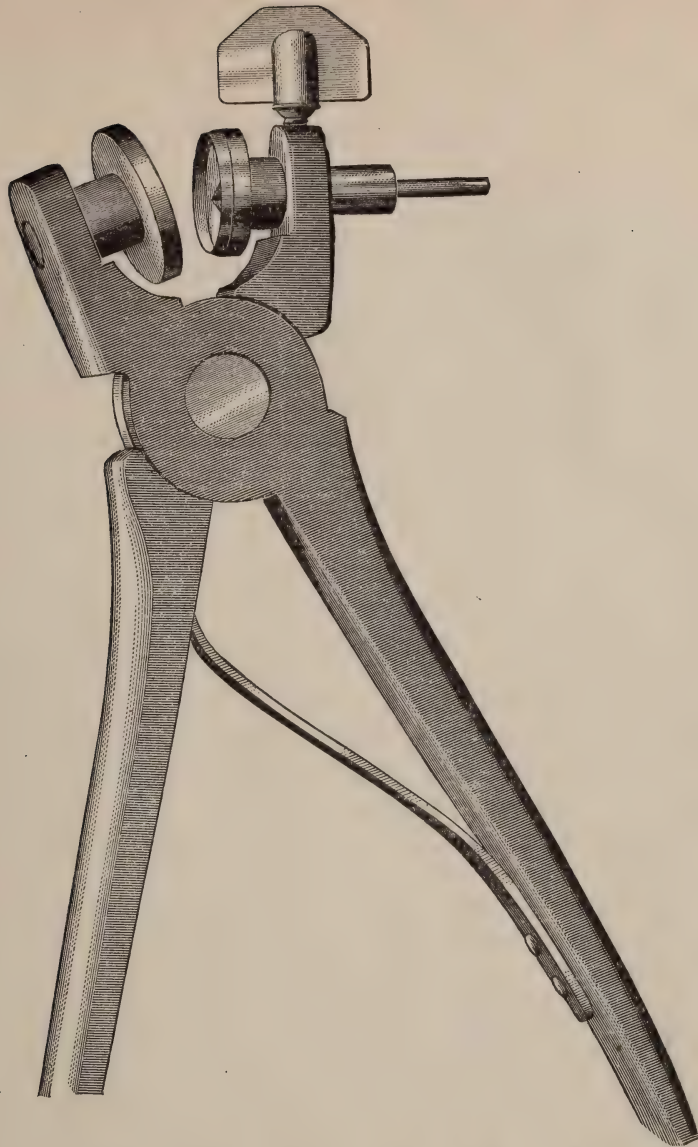
Dr. E. Honsinger introduced a filling of sponge gold.

Dr. Graves describes his operation as follows: The case of capping an exposed pulp had nothing peculiar or difficult about it to my mind. The exposure was large and the pulp inflamed, having ached and given more or less trouble for the last four or six months.

It had had no previous treatment. After adjusting the dam, I applied a solution of carbolic acid 40%, alcohol 60%, and removed the softened dentine as fast as it could be done without pain. This solution caused pain, as it is liable to, in a cavity with or without an exposed pulp. But the pain subsided upon applying a pellet of cotton dipped in water and warmed in a spirit lamp flame. After removing all decay and leaving the cavity open for three-quarters of an hour, I removed the pus and serum from the surface of the pulp and capped with oxyphosphate of zinc without pain, and filled with same.

The cavity reopened that was capped fifteen years ago, I consider a very remarkable case. When first seen, the patient applied to me in the morning to have the tooth extracted. The tooth had given trouble for a year or more, and had kept him from sleep the previous night. I refused to extract, but offered to do what I could for the offending tooth.

After removing all foreign substance I applied creosote and oil of cloves, equal parts, and operated on the tooth about three hours after. I found two exposures of pulp, one large and the other small. Over the large exposure I fitted a piece of quill, and covered it with oxychloride of zinc. Over the small exposure I put only oxychloride of zinc. After fifteen years I find that both exposures have been effectually closed with secondary dentine, so that gold could be put over the former exposures with safety.



DR. TAGGART'S CORUNDUM DISK AND POINT MAKER.

A practical instrument for making corundum points and wheels has long been needed by the dentist. Possibly there is no tool in the dentist's outfit that is so generally out of shape as the corundum wheels, and if the wheel is of a satisfactory shape so as to fit the place to be cut and of a proper grit to cut rapidly there is no tool that is more satisfactory.

This instrument is very practical, and the dentist can make and mount the wheels and points without any special skill being required, and can have much nicer wheels than we have ever been able to buy at the depots.

The wheels as made by the manufacturers seem to have been made on the plan, the smaller the wheel the finer the grit, which is all wrong, for the small wheel has enough to contend with in being small, and should have the benefit of having a clear coarse cutting corundum so that it can cut and not gum up as the fine wheels do. It is in trying to make these fine small wheels cut rapidly that makes them wear out, as the friction wears them faster than the actual cutting does.

The corundum laboratory wheels are named A, B and C, grits. A being the finest.

The dentist will find that for all points the size of a lead pencil a wheel made with a C grit, will outwear and outcut three of the wheels of the same size now on the market.

The wheels are made in the following manner. The suitable mould is selected and placed in the forceps; the set screw in the end of the forceps passes through the mould and holds it in place, and one more turn of the same set screw firmly grasps the wire shank. The worn out or broken laboratory wheel of proper grit is warmed until soft enough to cut into pieces approximating the size of wheels to be made. One of these pieces is placed in the mould and the forceps brought together firm enough to hold it in place while the whole mould is held over a Bunsen flame or soldering lamp; as the heat softens the rough piece of corundum, bring the forceps together with a firm grip, and as soon as the mould is full the surplus will be cut off, in very much the same manner that a biscuit cutter does its work.

The very thin Arthur disk is the only one requiring the use of parting material. The reason is that it has to be made so

much hotter in order to press it so thin, that there is some danger of melting the shellac to the mould. This danger is obviated by coating the mould with thick soapsuds, about as thick as the cream of borax used in soldering, or by using whiting and oil. The machine will make as perfect an Arthur disk as we have ever been able to buy. After the mould has been brought together, dip in water a moment to chill the shellac, and by reversing the set screw a quarter turn the perfect wheel may be taken out. The wheel as it comes from the mould has a glazed surface, which is caused by the shellac working to the surface under the heat and pressure. By placing in alcohol for five or eight minutes, the shellac is dissolved and may be brushed off with an old toothbrush, leaving a sharp, clear grit ready for use.

After a little experience one of these wheels can be made every half minute, which is at the rate of ten dozen an hour: as we have been paying for these mounted wheels and disks at the rate of three dollars a dozen, it seems there must be a considerable saving to the dentist, as well as giving a corundum wheel or point much better than he can buy.

Dr. Magill exhibited and operated a blowpipe. This little blowpipe is in principle the same as the Fletcher blowpipe, sold in all the dental depots, differing only in size and form. It is designed for light, delicate work, — throws a fine, pencil-like jet and is very effective. It is also equally effective in heavy pieces, by increasing the flow of gas, as was witnessed by a goodly number of those present at the clinic. Dr. Magill has used this little instrument for nearly a year. He has one of the Fletcher make on his bench, but never uses it, this small one is so handy and effective.

Dr. Magill also showed a regulating plate, which to be appreciated fully must be seen. The principal advantages are, 1st, it can be made to fit tight and worn a few days before the piano-wirespring is attached; this attachment is made by imbedding the spring in a groove cut in the plate to receive it (the spring), being fastened in position by a small wood screw (No. 1) passed through the coil in the spring, and screwed into a hole drilled through the plate, the screw acting as a tap, cutting its way as screwed into position. The groove can be filled over with gutta-percha, if desired, but the spring has more play and is

more effective if left open. The patient can place and displace at pleasure, for cleaning, eating, etc., but wearing at all other times. It has never failed to accomplish the end desired.

Dr. Allport's clinic consisted in the filling of a compound cavity extending up from the cervical margin of a first superior molar, and covering about one-half of the grinding surface. The cavity was prepared with burs and excavators. The edges were countersunk and smoothed with a bur which had been dulled by rotating it on an Arkansas stone. This was used in connection with pumice, the cavity being kept wet. In accomplishing this part of the preparation round burs were used for accessible parts and cones at the cervical margins. The cervical margin was left square, *i. e.*, at right angles to long axis of tooth. The rubber dam was adjusted after the preparation of the cavity. The cavity was wiped out with 95% carbolic acid for disinfection and for its obtundent effect. A matrix cut from thin steel was laid loosely into the space, its upper edge being slipped just inside a wooden wedge already in place, between the necks of the teeth. This matrix was allowed to tip back against the adjoining tooth not obstructing vision or manipulation. The gold used was Williams' non-cohesive and cohesive foils. The pluggers were broad surface foot, and deep serrated wedge points. Hand mallet. The filling was begun at the cervical margin with a block of non-cohesive gold. Pellets of a half sheet each were then added until the bottom was covered. The gold was then packed toward the lingual surface, bringing it from the bottom up the lingual wall of the cavity entirely back to the posterior extremity of the cavity. At that point it was wedged and secured perfectly. The gold was non-cohesive, *except* a small point of each pellet was annealed to attach it to the preceding pellet. Care was taken up to this point not to allow the non-cohesive gold to extend beyond the cavity's lingual margin. He then tore from leaves of cohesive gold small pieces, which were used to cover the entire surface packed up to this point. The lingual portion was then entirely completed by using flat folds of cohesive foil extending from the bottom of the cavity out over the margin, securing a safe anchorage and rendering it certain that the gold would not flake up from the surface. The remaining labial portion was then filled with non-cohesive gold by lateral pressure, the surface be-

ing completed with cohesive in the same manner as the lingual surface.

Dr. Whitefield demonstrated the advantages of the Rapid Engine; as the name indicates it is devised to run at a high rate of speed. With it excavating is done with ease and rapidity, the sensitive portions of the cavity being prepared with so little pain to the patient that they hardly realize that the work is done.

Dr. W. used a bur devised with special reference to this class of engines, the blades of which are set at a greater angle and wider apart than the ordinary bur; note article on Pain in Dentistry in October DENTAL REVIEW.

The Rapid Engine with properly cut burs appears to be an obtundent. The case in the clinic was a sensitive cavity in the buccal surface of a first molar. A bur was selected about half the size of the part of the cavity to be operated on. With one positive, firm, but light sweep of the bur, the cavity was cleaned of the decay and in an instant of time, as the engine was running at about 5500 revolutions per minute. The patient experienced no more pain than he did in probing for the cavity with his toothpick.

For hard enamel, a differently cut bur is used, one with blades parallel to the enamel rods, and with a speed of from 200 to 1000 revolutions per minute.

In using polishing disks, the speed at which they work best, and produce the least friction is from 3500 to 7000 revolutions per minute, according to quality of the disk.

Where it is necessary to cut out an amalgam filling, the rapid bur will cut with astonishing ease. A large filling was removed as if it was but softened dentine.

Steurer's plastic gold was used by Dr. W. in these fillings. This gold is worked apparently with as much ease as amalgam. Its color is the same as leaf gold when polished. It is very cohesive, and for contour work is unsurpassed.

Dr. W.'s apparatus for bleaching teeth by electrolysis consisted of an electrode, terminating in two platinum needles, insulated to within a half inch of their points, and having a circuit breaker to be operated with the finger.

After a discolored tooth has had the root or roots filled nearly level with the cervical margin, a solution of chloride of sodium

is introduced into the cavity and decomposed by the galvanic current liberating free chlorine, which unites with the hydrogen of the water, liberating free oxygen in its nascent state, which is a powerful bleaching agent. Time required to bleach a tooth varying from ten minutes to one and a half hours, according to the amount of discoloration and the density of the tooth.

Among the electrical appliances exhibited by Dr. W. was an electric laryngoscope, by the aid of which obscure cavities are easily detected. Also a galvano cautery devised by Dr. J. Foster Flagg, by the use of which he claims that he can reduce the sensitiveness in sensitive dentine. He also exhibited an electric root dryer, using the handle of the electrode used in the bleaching process. The current is passed through a coil of platinum wire heating it; through the coil is thrust a nerve broach, which is heated sufficient to evaporate the moisture from the root.

Dr. Daniel B. Freeman filled with home-made gold pellets, quite an extensive labio-gingival cavity in a left superior cuspid tooth, extending on one approximal surface, using his Improved Double Loop Clamp, devised to fold the rubber dam over and beneath the gingival border, hold it in place, make visible and keep dry such cavities however extensive, which greatly facilitates impacting the gold.



1. Inferior six year molar and canine.—2. Cavities of decay.—3. The rubber dam applied.—4. The clamps holding the dam in place, making visible and keeping dry the cavities while impacting gold.

He also exhibited models of several sizes and forms of clamps illustrating their application. He also made matrices of "Taggart's Tin," and presented models illustrating their application, together with a tin cap or crown to wear temporarily on a well tooth while resting one lame with pericementitis.

Dr. Woolley gave a demonstration of his root canal dryer, filling the root canals of a first inferior molar, left side. The pulp of the tooth had been devitalized three weeks previously, and had received two treatments since.

After applying the coffer dam around the tooth the crown filling of gutta percha was removed. Upon probing into the root canals they were found to be well opened to the apical foramen, and in a healthy condition.

Proceeding further with the operation the root canal dryer was introduced, which consists of a copper broach, to which is attached a bulb of the same metal. After heating the bulb the broach in turn becomes hot, thus thoroughly drying out the root canals. If any moisture is found in the roots a hissing sound will be heard either by operator or patient.

Continuing the operation the broach was used to burn out the septic matter. The root then was ready to fill.

In the introduction of a root filling great care should be used to exclude the air from the pulp canals. To accomplish this the root was saturated with chloroform, after which a solution of chloroform and gutta-percha was pumped into the root canals by a small broach wound with cotton, saturated with the above solution, until the patient felt a slight sensation of pain. After this gutta-percha points were used, forcing them toward the apex of the roots until the patient again felt a slight sensation of pain; the crown was then filled temporarily with a gutta-percha stopping.

Dr. J. Austin Dunn exhibited his medicinal syringe, showing a very valuable improvement, which does away with the soldered needle, and demonstrating, by a very simple method, that needles (like nerve broaches) can be kept on hand and adjusted at pleasure, and as quickly as in a nerve broach-holder.

He also demonstrated its use and efficiency in cleansing fistulous tracks through the root canals, by restoring the distal walls of a lower molar decayed below the gingival margin. The walls were restored with Fowler's Rubber Stopping, forming a simple cavity in the crown of the tooth. The needle of the syringe was then passed through a rubber cone packing (cut to suit the case) and into the cavity, and the cone held firmly in place by an instrument in the left hand, while applying the pumping force with the right.

Dr. A. E. Matteson presented casts of cases of dental irregularity, and appliances for correcting.

1. A very interesting case. Casts were made June 1, 1886,

when the correction was undertaken, showing contracted arch both above and below, the six anterior upper teeth projecting one-half inch in front of lower antagonists, the lower incisors striking the rugæ three-sixteenths of an inch back of the superior incisors. Both superior first bicuspid were extracted, a vulcanite plate made, with gold clasps extending around in front and to the first molars on buccal surfaces of both second bicuspid. Upon these clasps were soldered platinum wire hooks, two on each, out of the way of the cuspid, when drawn back in the former position of first bicuspid. This was accomplished by means of bands cut from the heaviest French rubber tubing procurable; and, notwithstanding these ligatures were drawn to their extreme tension, and with a triple power (no attempt was made to move more than the cuspid); very little movement of the cuspid resulted during the first six weeks, at which date the lady visited a summer resort, and I did not again see the case until about the 15th of September, when it was again presented. The appearance at this time was astonishing. The lady reported that during the preceding weeks the cuspid had moved very rapidly, and this evidence was confirmed by the discolored appearance of the cuspid. The pulps were evidently suffering strangulation (the normal color returned upon removing the tension), but they were, however, very near the clasps on the bicuspid. A new cast was made (and exhibited at the clinic), a new plate of vulcanite made, extending back as far as the third molars, and covering the hard palate. Platinum wire No. 19 was attached, passing around back of the third molar, on each buccal side, to the second molars, with an eye formed on the ends. The centrals were banded, and platinum wire attached to the ends of the jackscrews, and the distal end of nuts were hooked in the eyes of platinum wire extensions of the plate. A hook was soldered to the bands on the centrals, to prevent the wire from slipping upon the front teeth. The jackscrews were turned by a watch-key, and under the control of patient, who removed the plate for thorough cleaning four times a day. The lower incisors were drawn into line by means of a compound coil spring, made of piano wire No. 14—the lever ends resting upon the cuspid. To one of the eyes of the spring No. 20 linen Gilling twine was tied in a slip-noose knot—the twine passed behind the incisors, drawn tightly, and

tied to the other eye in a " half-hitch " knot (the ends of the spring having been drawn toward each other by binding wire, and held for the purpose of tying, and afterwards cut, releasing the tension of the spring). The pressure was brought upon the twine, drawing the incisors *forward*, and at the same time *spreading the cuspids*. The lower arch was expanded by means of a hard rubber plate, fitted within, and slightly overlapping, the inner cuspids and spaces between the teeth, not interfering with the articulation. A spring of No. 19 piano wire was formed to the lingual surface, with the ends bent at right angles. This was sprung into holes drilled in the plate between the first and second molars. These were all the appliances used. Casts were exhibited of the case at the date, and the patient present for inspection.

Other casts were exhibited, where the Compound Piano wire device was used for minor cases of irregularity.

Dr. Chas. P. Pruyn gave a clinic demonstrating the use of amalgam by filling a left upper first bicuspid, the roots of which had just been filled with chloro-percha by Dr. J. G. Reid ; the cavity of decay was very large, involving both mesial and distal surfaces and extending through the crown, which left the buccal and palatine walls frail ; rather than cut away those frail walls, he used the pulp chamber and a small portion of the roots for anchorage.

He used a continuous band matrix, which is the one suggested by Dr. D. B. Freeman, made of " Taggart's tin " which is very thin and pliable and easily adapted to most any case where it is needed.

The formula of the amalgam that he used is

Tin,	-	-	-	-	55
Silver,	-	-	-	-	37
Gold,	-	-	-	-	5
Zinc,	-	-	-	-	3
					<hr/>
					100

This was thoroughly mixed in a Wedgwood mortar, and used very dry, which required great care in packing into the cavity, so as to have the parts thoroughly united. A soft mixing of the amalgam would have resulted in an excess of mercury under the plugging instrument and consequently deficient edge strength.

Dr. C. F. Hartt demonstrated his method of making orange-wood points for root filling, which consists in rotating an already sharpened stick on a revolving sandpaper disk, which at once gives it the desired fineness and taper; these points are then dipped in Professor Black's "one two three mixture," and when dry receive a thin coat of shellac varnish, these points are quite flexible, and not being softened by chloro-percha pass more readily into the smaller root canals. The same gentleman also exhibited a neat little forceps for the extraction of difficult roots in the lower jaw.

The teeth prepared and filled by Dr. Wendel were the first and second lower molar of the left side, the cavities being proximal and extending below the free margin of the gum. The teeth had been slightly wedged but not prepared. Dr. Wendel prepared both cavities, finishing the margins very carefully and preparing with little undercut. The cavities being very large, heavy gold foil was used for filling the same, numbers thirty and sixty being employed. About fifty grains of gold were consumed in filling these teeth, which were inserted by the aid of the electric mallet. The instrument in the hands of this operator worked admirably, and witnessing an operation by an expert, naturally suggests the question, why the instrument is not in more general use.

The operation performed by Dr. Salomon was in gold. The case was a central and lateral incisor, decayed upon distal and mesial surfaces, reaching to cutting edge, corners gone.

To restore contour to the two teeth, they were shortened about one-sixteenth of an inch, cavities prepared in usual manner, cutting edges grooved and combined with cavities on the proximal surfaces. The pulps in both teeth being alive, support for both fillings was obtained in grooves cut in the cutting edges. These after preparing were perceptibly beveled so as to bind both the inner and outer plates of enamel, preventing them from giving away in masticating. The cavities or rather teeth had been prepared before the day of the clinic. The filling of both teeth consumed about eight leaves of number four foil and required sixty minutes for packing the gold; folded foil, the thickness of number thirty-two was used during the greater portion of the operation, the cutting edges being finished with number sixty foil. The instrument used for packing the gold was the Bonwill-Webb

Electric mallet, a four cell Bunsen battery furnished the power. The fillings were polished and shaped in about twenty minutes more. The patient can be had at the next clinic of the dental society for the members to inspect the fillings and margins as well, great care having been taken in preparing the margins, a magnifying glass not revealing any raggedness at any part of the same.

Dr. W. B. Ames demonstrated a method of bleaching discolored teeth by the electrolytic decomposition within the tooth of acidulated water (sulphuric acid one minim in a glass of water, to render it a better conductor). The cavity is flooded with the acid water and the negative electrode placed at or near the margin of the cavity in contact with the moisture. The positive electrode is passed about the interior of the cavity. The water is decomposed, the oxygen appearing at the positive pole and the hydrogen appearing at the negative. The positive electrode should be a platinum or gold point. The negative electrode can be conveniently made by attaching the conductor from the zinc of the battery to the metallic frame of a mouth mirror, and make it answer a double purpose.

He also gave a demonstration of the treatment of pyorrhœa alveolaris by the electrolytic decomposition of the fluid contents of the pockets about the root, and by the electrolytic decomposition of iodide of potassium which is placed in the pocket. To accomplish this, a platinum or gold broach is connected with the carbon of the battery and a sponge electrode with the zinc. The broach is passed into the pocket and the sponge held by the patient in the hand, or against the face at some point. If the iodide of potassium is used, a few crystals can be picked up on the broach, previously moistened, and carried into the pocket, when nascent iodine will appear upon the surface of the broach. If the fluid contents of the pocket are alone decomposed, there will be nascent oxygen liberated upon the surface of the broach, which is known to be a germ destroyer, but not so efficient as the iodine. In addition to the effects of the nascent oxygen and iodine, there is obtained a stimulation by the galvanic current. Dr. Ames has used these processes for more than three years and reports excellent results. The ease with which the remedies are applied especially recom-

mends the processes, as well as the greater potency of the agents in their nascent state.

Dr. Whaley's case of bridge-work. This bridge consisted of a section of five teeth, including attachments, which latter were the left upper cuspid and second molar — both vital.

The molar was first ground flat on its masticating surface to admit of a new occlusion. The circumference was then ground to taper from its cervical margin.

Pure gold, No. 30 Stubbs' gauge, was used for band. The cap was swaged from pure gold No. 34 and filled with 20-k. solder. It was then squared and soldered to band with 18-k. solder and driven to position.

The cuspid was by its normal development conical, therefore favorably shaped for the purpose. This attachment was made after the partial cap system, *i.e.*, no gold showing on the labial surface; the palatine surface being entirely covered from the gingival margin to the cutting edge.

A close adaptation was obtained by making a cylinder the full length of crown of No. 30 pure gold. A thin piece of pure platinum was then burnished into the space between the cylinder and the palatine surface, and cemented in position with hard wax. This was removed from cuspid, invested, and 20-k. solder substituted for wax.

It was then ground to proper shape, the labial surface being removed, and placed in position. The bite was taken and both caps were removed in an impression and placed in an articulator. Three bicuspidis were used to fill the space. The first showed porcelain to the cutting edge. The other two were covered with swaged gold caps, completely covering the porcelain. They were held in position in wax and invested. The wax and superfluous investing material were removed; the case was heated up, soldered, finished and cemented in position.

The clinic of the Amalgam filling, by Dr. A. O. Hunt of Iowa City, Iowa, was interesting as a demonstration of the method of using amalgam, where the proportion of mercury to the metal is so adjusted (ten grains of amalgam to seven grains of mercury) that when the metal was amalgamated and placed in the cavity in experimenting, the mercury could not be forced to the surface, as was tested thoroughly with intense pressure by Dr. W. N. Morrison

of St. Louis. The filling in this condition was almost as firm as when filled two or three days by the other method. The amalgam is put into the cavity by burnishing, with a set of smooth-faced amalgam instruments, Dr. Hunt's own pattern, the object being to burnish each piece upon the firm portion of the filling, making it a hard, compact mass.

It has been provided that the cases of bridgework, the capped pulp, and implantations, as well as fillings will be present at a future clinic for examination.

Respectfully submitted,
J. W. WASSALL,
A. E. MATTESON,
LOUIS OTTOFY,
Committee.

PASTEUR AND HYDROPHOBIA.

The royal commission appointed in April, 1886, by the British Local Government Board, has submitted to the House of Commons a report which declares that M. Pasteur has been successful, and that it "would be difficult to overestimate the importance of the discovery, whether for its practical utility or for its application in general pathology."

This commission was made up of Sir James Paget, Dr. Lauder Brunton, Dr. George Fleming, Sir Joseph Lister, Dr. Richard Quain, Sir Henry E. Roscoe, and Dr. J. Burdon Sanderson, with Prof. Victor Horsley as Secretary. Its work consisted of personal investigation at Pasteur's laboratory in Paris and a series of experiments conducted by Prof. Horsley in London. Attenuated virus was obtained by Pasteur's process and dogs were inoculated with it. Dogs so protected were, in company with rabbits and other dogs not inoculated, exposed to mad dogs and mad cats, and all were bitten. The protected dogs were not attacked by rabies, but nearly all the unprotected dogs and rabbits died of that malady. One of the protected dogs died, after having been bitten three times, but the commission asserts that the fatal ailment was not rabies, for two rabbits inoculated with parts of his spinal cord showed no signs of the disease. "Hence it may be deemed certain," says the commission, "that M. Pasteur has discovered a method of protection from rabies comparable with that which vaccination affords against infection from smallpox."—*Sanitary Era*.

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DENTAL INFIRMARIES AND DENTAL LAWS.

At the present time much of the good sought to be accomplished by state legislation, is threatened with a backset by the incorporation of "colleges" and "dental infirmaries." In some states the secretary of state will issue articles of incorporation to three or five persons for almost any purpose, by the payment of a small fee. All that has to be done is to apply for a license, which may propose a capital stock of a nominal amount, and after the necessary steps have been gone through with, the "institution" is ready for business. It is not necessary that the stock should be paid up in full, it must be subscribed, however. In some other states persons seeking to become an organization for business purposes must apply to state legislatures. It is then more difficult and more expensive to procure the necessary license to do business when the state votes away a charter. It appears from newspaper reports that Illinois or Chicago is likely soon to have a dental college or infirmary on nearly every prominent street corner, as there are not less than a dozen or fifteen institutions incorporated or chartered in Chicago alone. We do not know whether it is proposed by these numerous institutions to teach students of dentistry or not, or to engage in the business of dentistry for profit. Judging from the advertisements for patronage, they are simply eleemosynary institutions for the benefit of the poor, or persons of limited means. If they are incorporated solely for that purpose the projectors are certainly public spirited, and deserve to be counted as true philanthropists. If,

however, they are simply incorporated for profit, and their advertisements are intended to draw in people for the sole purpose of obtaining fees, it becomes a serious question as to their right of existence under the state dental law. The law states that none but regularly registered or licensed dentists shall exercise the practice of dentistry without incurring the penalties of the act. If it should turn out that dental infirmaries employ illegal practitioners to dole out services to the ignorant or worthy poor, it might be determined by a court of competent jurisdiction, that the heads of so-called colleges or infirmaries, conducting them as mercantile ventures, would be likely to have their charters declared unconstitutional and contrary to the statute authorizing the issuance of a license. An infirmary or college would, we think, be held as a place wherein instruction was given by a corps of teachers, either clinical or didactic. If it could be proven that the institution gave no instructions to students, but did a purely mercantile business, it would seem to us that the incorporation would be considered as having no *raison d' être*, and the charter could be annulled. The idea is pretty firmly established in the public mind, that an infirmary or college infirmary is a charitable institution, licensed by the state to render services to the needy and unfortunate at a purely nominal price for medicines or other services, and if an infirmary is not run on this basis, but on a basis of profit to the incorporators, then it is a fraud on the public and should be abolished. It will not do to allow companies of individuals, who are not dentists, to degrade the profession in this way; the chances for much evasion of the law are too great and the profession of dentistry in Illinois is too wide awake to allow men to practice the art behind the cloak of an infirmary or college which does not pretend to be engaged in giving instruction to students. The DENTAL REVIEW is opposed to shams, deceptions or evasions of the law of the state, and the attention of the profession is directed to a hitherto unsuspected method of practicing dentistry, in this purely commercial way, without compliance with the letter of the law. The attention of the State Board of Dental Examiners is also called to this matter for investigation and supervision. Every honest practitioner will, we are sure, lend his aid to the stamping out of any and every such bogus dental infirmary or college in the state.

DENTAL JOURNALISM.

As our experience in editing a dental journal extends over a period of a year or two, we would like to make a few suggestions to correspondents and authors of papers, as well as to secretaries of societies. In writing a letter for publication, use ink. Always begin the letter by leaving room at the top of the first page for a change in the title. Number the pages. Write on one side of the paper; leave space enough between lines to enable the editor to make corrections or additions. Do not use & for and. Punctuate. Do not *italicize*; this is in very bad taste, as a rule. Leave private matters for a separate sheet. Send the letter by the first of the month, when you wish it to appear in a journal that is issued on the fifteenth. Editors of dental journals generally have a little practice to attend to, and can not spend all their time reading proof during the hours of daylight. Authors of papers will do well to remember that an original communication should be in the hands of the editor one month before the date of its appearance in the journal. When such communications are not in the hands of an editor until the twenty-fifth or thirtieth of the month, it is generally impossible for the proof to be sent to the writer for correction. Proper spelling and punctuation should not be overlooked. Abbreviation of words and names, is not good form, and it makes work for ye editor. Secretaries of societies seldom appreciate the necessity for haste, in sending in the lists of officers for publication. We do not care for business minutes, unless they are of general importance to the whole profession. In making a report, the third person is generally the best form in which to report a speaker. Repetition should be avoided. If another speaker says the same thing, or nearly, report what has been said before; do not report the latter. Always give the next place of meeting, and the date of it. When a paper is sent, that has been read before the society, attach the name of the author. By observing a few such suggestions, correspondents, authors, and secretaries will save much labor for an editor. Do not use slangy phrases, in original articles, or in letter writing. Cold facts and experiences in practice, told in a logical manner, is what tells with a reader. Never draw on your imagination. If you have any thing new, tell it so that it can be understood.

There would be fewer claims of priority of invention, or discovery, if dentists would write out what they have invented, or discovered. Be brief, but always to the point. Abuse of another party, is not always in good taste. Point out the fallacies of the paper you criticise. When a paper is attacked, be sure of your ground, then go ahead. Be fair. Do not attribute wrong motives, without positive knowledge. Be sure of your facts, and send in your COMMUNICATIONS.

SEPARATION OR SUPPURATION.

It was stated by one of the speakers at the meeting of the Southern Dental Association "that after the death of a pulp by the use of arsenic, there can be no separation without suppuration." We understand by this statement that the pulp has been allowed to remain, undisturbed, in the tooth for a period of eight days or thereabouts. The reason for the above statement was contained in a remark in a paper by Dr. A. E. Baldwin that he waited a certain period of time before attempting the removal of the pulp after its destruction. There is no universal method or practice in the removal of pulps after their vitality has been destroyed by the use of arsenic. It is time that some uniformity of practice in this direction should be attempted. When arsenic is allowed to remain in contact with a pulp for from 24 to 48 hours, in many cases pressure on the pulp mass, will cause pain. This may be accounted for in several ways. First, the pulp may not have been punctured—allowing the blood to escape. Second, it has not separated from the living connection at the apex of the root. Third, it may not be wholly dead. If the pulp be punctured and the blood is allowed to ooze out, a dressing of tannin and glycerine applied, and the cavity sealed with gutta-percha for a week, it may be removed painlessly. The tannin and glycerine will diminish its size by abstracting water and will also convert the pulp tissue into a tough leathery substance easy to remove. *The dead pulp will have separated from the living tissue without the production of pus, as has been demonstrated by the extraction of a tooth and an examination of the contents of the pulp canal under the microscope.* Arsenic is a preserver of lifeless tissue for a certain period, even in minute quantities, as 1-12 gr. will pre-

vent decomposition of about 3vi beefsteak, for from twelve to fourteen days, when exposed to the air and moisture of the atmosphere, to say nothing of microbes and their spores. Glycerine is also a preservative and tannin is an astringent and always hungry for water. We desire to state from experiments on this subject, and long clinical experience that the application of arsenic to a pulp, after the suppurative process has begun, will arrest it for a period of from twelve to fifteen days, even though nothing but dry cotton, or cotton moistened with creosote, carbolic acid, alcohol, oil of cloves, or other essential oil, is placed over it, to protect it from contact with food. The separation of dead pulp tissue, from the living, under such circumstances is physiological, not pathological, and is in no wise likely to produce future trouble. We can not agree with the speaker at the Southern meeting for the facts are against him, reason likewise and the indisputable proof of microscopical examination, to say naught of long practice and observation.

ADVERTISING.

A correspondent has sent us the following editorial on the subject of advertising, to which we invite the attention of our readers :

PEOPLE WHO DON'T ADVERTISE.

In connection with the convention of dentists in this city some consideration has been given the subject of advertising. Taking their cue from the medical profession, the scientists who make a specialty of teeth tinkering have a rule under which advertising is prohibited. The same rule ought not to govern the two professions, as the conditions are different. If the doctors prefer to remain in obscurity, except through such free newspaper mention as they can manage to procure by hook or by crook, that is no reason why the dentists should do the same. Attention to their teeth is one of the things people seldom think of until they get a reminder in the shape of a real roaring toothache. They would think of it oftener and thereby keep their teeth in much better order if dentists' cards were a common thing in the newspapers.

It is, moreover, unfair and hard upon a young man who has spent four or five years in qualifying himself for practice to deny

him the privilege of using the advertising columns of the newspapers to let his friends and acquaintances know where he is and what he is doing. What time he is waiting to build up a reputation and patronage by word of mouth ; he may have a wife and children who are close to starvation, while the families of his neighbors, the grocer and baker, are living in luxury, because it is not considered "unprofessional" for the grocer and baker to advertise and get on in the world. The dentist who is enterprising, inventive, and skillful should not hide his light under a bushel. His usefulness to society and his personal success would both be enhanced by suitable advertising.—*Chicago Evening Mail*.

The code of ethics does not prohibit the dentist from printing his name and address and office hours in the daily, or other newspaper or magazine, but it does prohibit the publication of a fee bill, the issuance of circulars or cards claiming superiority over neighboring practitioners. It also prohibits the advertising of secret methods of practice or inventions of which he claims to be the sole discoverer or owner or patentee thereby proclaiming his superiority. The code was designed to guide the beginner or recent graduate into correct professional paths, for the purpose of maintaining professional character and to free the educated dentist from all shadow of charlatanry, and in this interpretation we think it will answer the above quoted article.

A CASH PRIZE.

The editor will pay \$25 for an original article of not less than ten nor more than twenty-five printed pages of this journal, on the subject of "Bleaching Teeth." He reserves the privilege of dividing this sum, by awarding \$15 to the best paper offered and \$10 to the next best, in case the judges agree that none of the papers are worthy of the whole prize. The papers should be addressed to the editor by June 1, 1888, having a motto attached and a similar motto written upon a sealed envelope which should contain within it the real name and address of the writer. The judges will be Drs. Geo. H. Cushing, Edmund Noyes, and W. B. Ames. We will publish at least three of the papers sent in competition for the prize, and should the judges deem any one

of the remainder worthy of honorable mention, a year's subscription to the DENTAL REVIEW will be awarded to the author of such paper.

DELAYED.

The DENTAL REVIEW is supposed to be issued, promptly, on the fifteenth of the month, but the troubles connected with a strike of printers in Chicago for the past two months, caused a delay in issuing the journal for November and December, which was unavoidable. We hope that no such disturbance will delay the publication of the REVIEW during this year, and that as the new force grows accustomed to journal work, that our pages will be freer from typographical errors than it has been in the past.

DOMESTIC CORRESPONDENCE.

ENGLISH DENTISTS AND DENTISTRY.

To the Editor of the Dental Review :

DEAR SIR:—While visiting England last summer I could but notice how strikingly different the practice of dentistry is carried on there to what it is here in America, both by the prominent and conscientious practitioners and by the class whose sole aim is for the fee they receive.

In London especially is this distinction most apparent. If a stranger takes a stroll through the West End and sees the name of Mr. Dodds inscribed in a neat manner on a small brass plate on the door of a fine private residence, he is not merely impressed with the fact that here is located some well known English dentist, or may be doctor (M. D.) though rarely, for from patients and society alike he receives the title of Mr.

The American dentists there distinguish themselves by the title Dr. and are generally so called by all. They rapidly drift into the customs of their English colleagues with their secretary, footman, buttons, and multiple reception and waiting rooms for patients, who are seen by appointments only, made exclusively by correspondence, or telegraphic message in an urgent case, thus

patients do not see each other and it enables the dentist to better utilize his time.

While the average American is thus fully up with the times generally, and the skill and ability of the American dentist is universally admitted, still I think the American charlatans, and they have my unqualified "praise" as good original liars, could pick up a few points there that would be a revelation to them in their mode of crime.

Some of the most glaring examples of quack dentistry can be seen along Edgware Road, the Strand and vicinity, and Ludgate Hill. Here can be seen in big shop windows cart-loads of plates and models, and I am speechless with the cheapness, durability and guarantees that are included when "teeth are inserted from 4s."—about \$1.00.

The plates here displayed are mostly solder cases on brass, gold and silver plated, a few on dental alloy and fewer on vulcanite. I think the lack of the latter is accounted for by it not making such a gorgeous display. These plates and those made to order for customers are made by boys and workmen, in the cellar "workshop," mostly at salaries from 10s. to £3 per week.

Judging from the location of some of these shops I was inclined to think that their proprietors believed in Dr. Land's ideas of adhesion and capillary attraction in retaining dentures as the "pub" next door afforded a convenient place to pleasantly wet them.

In company with several other American dentists then in London I had the opportunity of visiting the Dental Hospital of London, Leicester Square. Here they have already a large building which is soon to be increased, as their lecture room is now too small and their splendid specimens in the museum are deserving of a better display.

The pair of extracting chairs to the left of the front entrance are of solid wood, oak, I believe, unupholstered and as crude as one can imagine a dental chair to be. Anæsthetics are not given in this room but are administered, usually nitrous oxide, in another room across the hall, in which is a chair a little more modern. The operating room or where the "stopping" is done is on the top floor which, with the balance of the hospital, is under the charge of different gentlemen at different times. There is simply no

comparison between this institution and one of our well regulated dental colleges. The gentlemen composing the faculty have no power to grant the English degree of L. D. S. but simply recommend the students to the examining board for degrees, which are now essential to registration in the home list, as practitioners, by the Medical Council, for they have a foreign list as well. This is more to accommodate the American "noblemen" who being citizens of this country can by presenting their diplomas from either the University of Michigan or Harvard, accompanied by £5 (or \$25) be registered in the foreign list and are eligible to practice anywhere in the United Kingdom. The British subjects, on the same conditions are debarred and must fulfill *their* requirements and be registered in the home list.

There are quite a number of Americans who have gone over as operators to English "firms" and through these have the English public been most forcibly impressed with their superiority by comparing or contrasting, I may say, the two modes of operating and their results. This has been a large source of revenue to the employer who in drawing up the agreement compels the operator either to refrain from practicing in toto in his city or locality for a stated number of years, or from operating for or soliciting any of his former patients for a certain time; this state of affairs and their general inability to register, causes them, if they desire to remain there, to seek a partnership with an Englishman who is an L. D. S., and then he begins to lose his identity as an American dentist.

The "chosen people" occupy a larger sphere in dentistry there than here, and carry on the practice with the same conscientious scruples that characterize their race in the other vocations of life.

Sig.

FOREIGN CORRESPONDENCE.

HINTS FOR THE LABORATORY.

To the Editor of the Dental Review:

DEAR SIR:—The following hints for the laboratory may be of some use to your numerous readers.

To make sheet wax for base plates, a good article may be pre-

pared as follow: Melt nearly the desired quantity of beeswax, then add one third in bulk of melted stearine (the reason the proportions are given in bulk, is because the specific gravity of beeswax varies so much, it nearly all being more or less impregnated with foreign substances). The above when thoroughly melted and stirred, should be poured into suitable moulds, that have been previously oiled, and allowed to cool. I find the best way to reduce it to the required thickness is to place it in warm water, then roll on a board in which has been placed wires of a thickness the wax is to be when finished, the ends of the wires are bent at right angles and driven into the board, producing as it were large staples, these arranged at a width to suit the roller insures a uniform thickness of the wax; the best way to prevent the wax sticking, sprinkle the board, and rub the roller occasionally with French chalk, this leaves a nice surface on the wax, which will be found to be tough and semi-flexible and not brittle at ordinary temperatures. A very good preparation for polishing instruments may be made as follows:

To one quarter of a pound of tallow add one half a pound of emery flour and one ounce of rouge, melt the tallow first in a suitable vessel, then add the rouge gradually, stirring all the time, then add the emery, continue stirring for fifteen minutes, applying enough heat to keep the mass at the melting point; when thoroughly mixed pour into paper or chip boxes; these may be obtained from any druggist.

I have found this preparation is best utilized by means of a felt wheel on the polishing lathe, a sufficient quantity may be obtained as required by holding the paste against the wheel while revolving.

This will be found useful for all kinds of metal polishing, especially so for steel instruments.

A "chestnut" has been going the rounds of the dental journals about the efficacy of salt water for hardening steel. Should any one desire instruments to be as hard as it is possible to make steel, let them use mercury to plunge the instrument in after it has been heated to the proverbial "cherry red." I think this method will give the salt water bath a much needed rest.

Yours truly,

W. MITCHELL, D. D. S.

London, England.

REVIEWS AND ABSTRACTS.

INDEX OF MATERIA MEDICA, WITH [PRESCRIPTION WRITING, INCLUDING PRACTICAL EXERCISES; BY CHAS. H. MAY, M. D., AND CHAS. F. MASON, M. D. NEW YORK, WM. WOOD & Co., 1887. Interleaved for the use of students and practitioners.

This work belongs to the series known as "Wood's Pocket Manuals," and is of very convenient size for the pocket. It is a condensed pharmacopœia, and includes many non-official drugs which without great labor could not be found save by consulting many treatises of great bulk. It will prove a labor saver to the busy practitioner, and refresh his recollections of drugs which are seldom used. To the student it will prove invaluable as an aid to examination, and also in the practical exercises in prescription writing, which are very clear, easy and simple. Dentists who are unused to writing prescriptions, will profit by studying a work of this nature, as well as those who have not access to more pretentious and the recent works on materia medica.

ACTION OF THE MEDICAL COUNCIL OF GREAT BRITAIN ON THE CASE OF MR. H. F. PARTRIDGE.

The Registrar stated that Mr. Partridge had been summoned to appear before the Council on that day, but did not appear either in person or by any representative.

Mr. Wheelhouse moved, and Dr. Matthews Duncan seconded, that the report from the Dental Committee in regard to this case be received and entered in the minutes. This motion was agreed to.

Mr. Farrer stated that in this case the Council had on June 2nd, 1886, directed the erasure of Mr. Partridge's qualification and name from the Register. There was an undoubted power in the Council under the Medical act of 1858, to withdraw names from the Medical Register, where all the qualifications had been taken away; but, unfortunately, this by some oversight was not repeated in the Dentists' Act. Mr. Partridge subsequently applied for a mandamus to restore him to the Register, and this was

granted on June 15th last, on the ground that his case had not been decided on the merits of the case. That decision was affirmed on appeal, and Lord Esher, in delivering the judgment of the Court, said that although the mere fact of a person having broken that which he undertook to do with his local authority, and having been in consequence struck off their Register, did not entitle anybody to strike him off the Register without inquiry, yet these facts brought him within the jurisdiction of the Medical Council, and if they were of opinion that what he had done was disgraceful in his professional capacity—and he should say himself that a deliberate and persistent breach of this obligation would be disgraceful conduct, upon which they might come to the conclusion that he had been guilty of disgraceful conduct—then, after giving him the opportunity of being heard before them, they might erase his name from the Register. Lord Esher therefore not only suggested but encouraged, and almost called upon the Council to consider the case on its merits. The Report of the Dental Committee contained the following statement of fact:

“ The name of Henry Francis Partridge, with the qualification of Lic. Den. Surg. R. Coll. Surg. Irel. 1878, was placed on the Dentists' Register on December 20th, 1878. He did not claim registration on account of his having been in practice before the passage of the Dentists' Act, and cannot now be registered as having been in practice at the passing of that Act. On July 2nd, 1885, the Royal College of Surgeons in Ireland, withdrew or cancelled the diploma granted by them to Partridge, and a letter dated July 4th, 1885, notifying that fact, was addressed by the Secretary of the Council of the Royal College of Surgeons in Ireland to the Registrar of the General Medical Council, and at a meeting of the Executive Committee on July 10th, 1885, it was resolved that the Registrar be directed to make application to the Royal College of Surgeons in Ireland for information as to the cause of withdrawal of the diploma. The President and Council of the Royal College of Surgeons in Ireland, withdrew or cancelled the diploma of Mr. Partridge because of his having, in violation of his undertaking given to that College, attracted business by advertising in connection with the Ladies' Dental Institution, South Kensington. At a meeting of the General

Medical Council, held on June 2nd, 1886, it was decided as follows:—That the qualification of H. F. Partridge be erased from the Dentists' Register; that the name of the said H. F. Partridge be also erased from the Dentists' Register. The Ordinances of the Royal College of Surgeons in Ireland forbid advertising, and Mr. Partridge both before his admission to examination for his diploma in Dental Surgery, and again after passing his examination, and before he obtained his diploma, signed a declaration that so long as he held such diploma, he would not attract business by advertising or any other practice considered unbecoming by the College, and agreed that his diploma should be cancelled on its being proven that he had done so. Mr. Partridge has broken such pledge by advertising whilst he was still holding said diploma, and he did so after repeated warnings from the College. And, further, in answer to the first of such warnings, he apologised, and stated that he was willing to comply with the laws of the College. On June 15th, 1887, the High Court of Justice, at the instance of Mr. Partridge, granted a mandamus to the General Medical Council to restore his name to the Register of Dentists. On August 1st, 1887, on appeal by the General Medical Council, such decision was confirmed, and the mandamus directed to issue. The name and qualification of Mr. Partridge have been restored to the Dentists' Register pursuant to such mandamus. Mr. Partridge still continues to advertise."

Mr. Partridge, though not appearing in person, had sent in a written statement in which he stated that at the time of signing the arbitrary contract imposed upon him — namely, not to advertise — he did not anticipate being visited with blindness, neither did he think any objection would have been taken to his advertising his institution on precisely the same principles as medical men advertised self-supporting homes, etc. He denied that his advertisements could be described as "disgraceful." He was at a loss to understand the object of the present inquiry, having thought that the question had been finally settled, and his obligation fulfilled by returning his diploma. He regretted having violated his undertaking with his College, but no other course was open to him. Considering that he had been in the profession for nearly a quarter of a century, long before the Act of Parliament or the Register was ever dreamt of, he thought the

treatment to which he had been subjected was exceedingly arbitrary, amounting to persecution.

Mr. Farrer explained that the question before the Council was not that of advertising, but whether Mr. Partridge had behaved disgracefully in violating the undertaking which he gave to the College of Surgeons of Dublin.

The Council then deliberated in private, and on the readmission of strangers,

The President said the Council had agreed to the following resolutions:—"That in the opinion of the Council, Mr. Henry Francis Partridge has committed the offense charged against him—that is to say, wilfully violated the declaration made and subscribed by him, whereby he declared that as long as he held the diploma in dental surgery of the Royal College of Surgeons of Ireland, he would not attract business by advertising or any other unbecoming practice. That the offense is, in the opinion of the Council, disgraceful conduct in a professional respect. That the Registrar be directed to erase the name of Henry Francis Partridge from the Dentists' Register."—*The Lancet*, London.

EXTRACT FROM REPORT OF THE CLINICAL SOCIETY, LONDON.

Mr. R. Clement Lucas read a paper on the Congenital Absence of an Upper Lateral Incisor Tooth as a Forerunner of Hare-lip and Cleft Palate. He said the tendency of deformities to repeat themselves in succeeding generations, and even to exaggerate their defects, rendered an early recognition of their presence of some professional importance. He alluded to a family history he had published in the Guy's Hospital Reports for 1880, where he had traced eighty descendants of a woman who had supernumerary fingers and toes, and found that thirty per cent. were so affected. A case showing the hereditary tendency in hare-lip and cleft palate had come under his care in August of this year. A woman who had been successfully operated upon married and had six children. The second child and the sixth presented the same deformity as the mother, the others escaping. The object of this paper was not, however, to discuss the repetition of pronounced deformities, but to show the danger of a deformity

partially developed and likely to pass unobserved. He wished to point out (what he did not think had hitherto been described) that the congenital absence of an upper lateral incisor tooth may foretell the probability of cleft palate and hare-lip in a succeeding generation. He had been most careful to exclude any possibility of error through decay or extraction of the tooth in question. He illustrated his paper with three cases. The first, a man with congenital absence of an upper lateral incisor on the left side, had a daughter presenting precisely the same defect. The second, a woman aged twenty-five, who had a congenital absence of the right upper lateral incisor, brought her fifth child with right hare-lip. The third, a woman aged twenty-three, having congenital absence of the left upper lateral incisor, brought her first child suffering from hare-lip and cleft palate on the left side. His observations were few and had extended over ten years, but the association of these defects was too remarkable to go unrelated. Had he been able to examine both parents, which was seldom possible in hospital practice, it is probable he might have collected more cases. Now that attention has been drawn to the observation, it was likely that more cases would be collected. The author held the following deductions to be irrefragible: That the congenital absence of an upper lateral incisor tooth, resulting from an arrest of development, is to be regarded as a malformation closely related to hare-lip and cleft palate, and capable of transmitting each or both of these deformities to a succeeding generation. A dental member said that absence of the lateral incisor was of very common occurrence. To this Mr. Clement Lucas replied that the frequency of the loss was not an explanation of the absence of the tooth.—*The Lancet*.

PAMPHLETS RECEIVED.

THE LEGAL STATUS OF DENTISTS, by Daniel Nason, Esq., New York. Reprinted from the *Odontographic Journal*, October, 1887.

THE INCONSISTENCY OF OUR CODE OF DENTAL ETHICS, by C. H. Land, Detroit, Mich., 1887.

This is a plea for the right to advertise in the daily press. The author undoubtedly has some personal grievances to air, and

he seeks to enlist sympathy, and at the same time secure a sale of some inventions protected by patents, on the condition that purchasers of the right to use, will advertise the methods in secular journals.

THIRD ANNUAL REPORT MINNESOTA STATE BOARD OF DENTAL EXAMINERS, Dec. 15th, 1887. C. W. Merry, Secretary, Stillwater.

TALBOT ON IRREGULARITIES OF TEETH, AND THEIR TREATMENT. Received too late for review in January issue.

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TO THE EDITOR OF THE DENTAL REVIEW:

Dear Sir: I have a case of an abscess in the antrum, which discharges in the nose. I removed the roots of the first molar, and found an opening into the antrum, but no pus came from it. I saw the patient some three weeks after that, and still she complained of the pain and discharge in the nose. I examined the mouth, and found the opening into the antrum not yet healed. I discharged the patient, and told her to call soon for treatment. May I ask you what treatment is best for the case? By answering this, you will confer a favor upon

Yours, Fraternally,

N. D. E.

[Will some reader answer this query?—Ed.]

TO THE EDITOR OF THE DENTAL REVIEW:

Dear Sir: Would not wiping out the cavity with 1-1000 bichloride solution after shaping and cleansing it, be a good plan? Would any ill-effects result therefrom? Why could not the so-called soft, cohesive gold and tin be used as a filling material?

Ann Arbor, Mich.

STUDENT.

[No harm would ensue from using such a solution, for the purpose of disinfecting the dentine. Gold and tin combined are used as a filling material, with great satisfaction by many dentists. Use No. 4 gold and No. 4 tin, rolled compactly into a rope, and pack with hand pressure, malleting the surface.—Ed.]

TO THE EDITOR OF THE DENTAL REVIEW:

Dear Sir: Have you ever tried to remove a wooden point from the root of a lower molar tooth? I notice that wooden points are advised to be used as root fillings in some cases, where crowns are to be adjusted for the support of bridges, and in some other cases; and it has occurred to me that, in case you want to remove the point, there might be some difficulty in so doing. Do you not think gutta-percha, or oxychloride of zinc, would be more easily removed, in case of there being necessity for it?

Respectfully,

B. D. W.

[We have removed wooden points, and gold wire, also, with great difficulty. Gutta-percha, or oxychloride, in our practice, are easier to use, and better suited, for root fillings, than wood, and both are easier of removal.—Ed.]

MEMORANDA.

Professor C. L. Bloxam, the eminent chemist, is deceased.

Dr. A. B. Palmer, professor of pathology in the University of Michigan, is dead.

One of the daily papers reported that, at the clinic, one of the operators was engaged in "capping bulbs."

Creolin is the newest antiseptic and disinfectant. It is a derivative of the coal tar series, and almost non-poisonous.

We have had the pleasure of using some copper amalgam made by Dr. W. B. Ames, which promises to eclipse anything heretofore offered in that direction.

A surgical instrument dealer in Chicago recently received an order as follows: "If you have them in stock please send me 1 artificial palate C. O. D. and oblige."

The dental depot of L. D. Caulk, D. D. S., has been removed to 1305 and 1307 Arch street, Philadelphia, Pa., while the laboratory will be continued at Camden, Delaware.

TASTE.—Chemists have determined by careful experiment that a man can barely taste 3-100ths of a gram of sugar, 1-1900 of a gram of salt, and 5-10,000,000ths of a gram of strychnine.

Typographical errors will occur in the best regulated offices, and the DENTAL REVIEW sometimes suffers, as for instance, Idol should read Iodol and Laberaque's should be Labarraque's, page 823, vol. 1.

A few members of the dental profession in Indianapolis, Ind., have joined hands, and organized a dental society. The organization meets monthly, and a new president is elected at each meeting.

The Committee on Clinics of the Illinois State Dental Society, is already at work for the meeting of 1888. Several operators have been secured, and every effort will be made to have an interesting clinic.

"The management of pulpless teeth" is being translated into French by *Le Progrès Dentaire* in the pages of which it is running serially. Dr. Ingersoll's "Dental Science," is receiving the honor of a French translation also.

The recent death, at Lynn, Mass., of Gustavus Andrews, aged 77, recalls a famous New England tragedy. He officiated as deputy sheriff at the hanging of Prof. Webster, of Harvard, for the murder of Dr. Parkman.

Dr. Wesley M. Carpenter, of the *Medical Record* is no more. We remember him as a quiet, unassuming, painstaking journalist of great capacity. His will be a hard place to fill on the staff of our esteemed contemporary.

The reviewer of current literature of the *Western Dental Journal*, credits to the *American Journal of Dental Science* Dr. Cushing's paper on capping exposed pulps. This paper first appeared in the DENTAL REVIEW August, 1887.

The *Medical Record* expended upwards of \$4,000 in making its report of the meeting of the International Medical Congress. This is enterprise for a medical journal, at great cost, with little prospect for substantial returns for the investment. Their report, taken altogether, was the most accurate made by any journal in the world.

The REVIEW acknowledges the receipt of a number of New Year's cards from various gentlemen in different parts of the country. The practice of exchanging greetings in this manner is quite universal among members of the profession.

Terpinol and terpin-hydrate can be purchased from chemists now without bankrupting the purchaser. Terpinol is said to have an odor like hyacinths and terpin-hydrate is odorless and tasteless. The latter is sparingly soluble in cold water.

Dr. Louis Ottofy, associate editor of the DENTAL REVIEW, was married December 27, 1887, to Miss Nellie Freeman, of Englewood, Ill. The happy couple have the best wishes of the editor and his staff for an unclouded and prosperous future.

Saturate your sandpaper and emery disks and wheels with a first-class quality of oil. The best Italian or French salad oils are the most serviceable for this purpose. 'It makes the disks soft and flexible, less liable to break and useful under moisture.

Dr. J. Austin Dunn says that cocaine-ether painted over the soft palate will prevent retching and nausea when taking impressions. The next time you have a nervous patient try it. Cocaine-ether is composed of sulphuric ether, ninety minims, alkaloid cocaine, ten grains.

The principal objection to immediate root filling, in those cases where the pulp has been removed, and the root filled at one sitting, is the extreme soreness engendered; which continues from one to four or five days. The success of the operation, however, is not endangered by such a disturbance.

A facial abscess is a very unsightly disfigurement, especially in ladies, whether the result of a diseased tooth in the upper or lower jaw; and dentists should be extremely careful to prevent its occurrence. Generally, the unpleasant consequences can be avoided, and the dentist who fails to prevent, may be liable for damages.

We have received a copy of Pearson's appointment book for the vest pocket for 1888, and recommend the handy little book to any who wish to be able to tell at a glance at any time and any where, how their time is occupied. The book is gotten up in good shape, and may be had of R. I. Pearson, Kansas City Dental Depot, Kansas City, Mo.

A lady having an appointment with a dentist concluded to stay at home and give him (the dentist) a much needed rest. So concluding, she started a fire in an open grate and then went out for a walk. In a little while the house caught fire and was nearly consumed. Moral: People ought to keep appointments with dentists and save money.

Readers of the REVIEW will do well to remember that the Illinois State Dental Society will meet in Cairo, Illinois, the second Tuesday in May, 1888. Dentists from Indiana, Kentucky, Tennessee, Arkansas, Missouri, Iowa and adjacent States will find a warm welcome should they attend the next meeting. Clinics will be a feature of the meeting.

The *Archives of Dentistry* has passed from the hands of J. H. Chambers to an association of dentists in St. Louis. The editor, editors and correspondents now numbering upwards of one hundred will continue to do the literary work as in times gone by, and we wish them all—the association of dentists, editor, editors and correspondents a prosperous year.

To facilitate the polishing of plates we have found the bisulphuret of carbon very valuable. It dissolves vulcanized rubber, and by moistening the sandpaper with it, or by first saturating a dry felt cone with it, then dipping the cone into the pumice, polishing is materially hastened. For inaccessible places on regulating appliances made of rubber, its use is admirable.

MASSACHUSETTS DENTAL SOCIETY.—Officers of the Mass. Dental Society, 1887-8: President, H. C. Merriam, Salem, Mass.; 1st Vice-Pres., G. A. Gerry, Lowell, Mass.; 2nd Vice-Pres., R. R. Andrews, Cambridge, Mass.; Secretary, G. F. Eames, 62 Trinity Terrace, Boston, Mass.; Treasurer, E. Page, Boston, Mass.; Ex. Committee, E. B. Hitchcock, A. H. Gilson, W. E. Page, J. K. Knight, E. G. Leach.
G. F. EAMES, Sec.

Contributions may be expected to appear in the DENTAL REVIEW for 1888 from C. Edmund Kells, jr., D. D. S.; Edward H. Angle, D. D. S.; J. R. Callahan, D. D. S.; Prof. I. P. Wilson, D. D. S.; Thos. E. Weeks, D. D. S.; John E. Grevers, D. D. S.; Henry Barnes, D. D. S.; A. O. Hunt, D. D. S.; C. M. Wright, D. D. S.; Prof. L. C. Ingersoll, M. D., D. D. S.; Dr. W. P. Dickinson, and our special New York correspondent and numerous other well known dentists whose names will be announced in future numbers.

B	Carbolic acid (95 per cent),	3 ij.
	Thymol (crystals) - - -	3 i.
	Tereben, - - - - -	3 ij.
	Alcohol, - - - - -	
	Glycerine, aa, - - - -	3 ij.

Dilute to suit as a mouth wash, antiseptic and disinfectant.

Dr. C. H. Thayer, of Chicago, who is sojourning in Europe, is now temporarily located at Dresden, Germany. A letter recently received from him, states that he has found a doctor who understands English, and under whose care and good advice he is gaining in strength, and hopes, within a few months, to be sufficiently restored to health to return to business. The doctor states that America is good enough for him to practice dentistry in.

The right-angle attachment to a hand-piece may become a dangerous instrument holder, when a fine drill is used to enlarge a root canal, as was demonstrated on an extracted lower incisor recently shown us by Dr. E. D. Swain. The tooth had *four* holes through the sides of the root, which could not be successfully filled with the tooth in the mouth, hence it was extracted. Great care is necessary when the root of an incisor is being enlarged with a right angle drill.

B	Carbolic acid (95 p. c.) - - -	3 ij
	Tannin (powdered) - - - - -	gr xxx
	Glycerine - - - - -	3 ij

M.

Use diluted as an astringent and stimulant mouth wash, or to paint turgid gums

When the fracture of a piece of porcelain, from the face or the cutting edge of an artificial crown or tooth or from a block in the case of an artificial denture mars its beauty, instead of filling with gold, or where that can not be done, instead of making a new denture or inserting a new block, fasten the fractured piece with Van Stan's "Stratena" cement which is for sale in all drug stores, protect the tooth from moisture and wear, for three or four days, and the fastened piece will remain

firmly in position; when the fractured piece is lost, the broken surface may be ground smooth, a piece of porcelain from some other artificial tooth ground to fit and cemented on in the same manner.

A fact which we have observed and which should be noticed in regard to implanted teeth, is, that when in order to secure a proper articulation, or when for any other reason it is necessary to alter the shape of the crown of a dead tooth about to be implanted, the implanted tooth in course of time crumbles; the enamel is liable to fracture and the dentine to decay and crumble, hence as near as possible perfect adaptation should be secured without any grinding of the implanted dead tooth.

In the treatment of exposed pulps, or those supposed to be exposed, care should be taken to avoid setting up even the slightest irritation; we have known the favorable termination of some cases to be jeopardized by some slight irritation which might have been prevented. Remedies applied cold, to a pulp, cause pain, hence it is better practice to either warm the bottle containing the medicine, or if that is liable to injure its efficacy, to warm a slab, and take the amount necessary on a pellet of cotton from the bottle and place for a few minutes on the slab to warm it, then apply to the pulp.

Dr. J. S. Rice, of Laurel, Ind., has just returned from Melbourne, Australia, where he has been engaged in the practice of dentistry for five years. A communication from him has just been received, stating that they are now passing a regular iron-clad dental law in Australia, which will shut American degrees clear out. The bill has passed its first reading in parliament. The law, however, will not affect those engaged in practice at the time of its passage. The REVIEW will soon be able to publish a letter from the pen of Dr. Rice, stating the exact condition of dentistry in the Antipodes.

A curious specimen of a dental substitute, from the last century, was exhibited at the recent clinic of the Chicago Dental Society, by Dr. T. W. Brophy. The piece consisted of ivory, carved to fit the upper and lower jaw. The block was carved so as to fit the alveolar process, and on each side a bicuspid and two molars were carved in the same block. The anterior teeth consisted of human teeth, fastened with gold to the ivory. The carving was skillfully done, the sulci and cusps of the molars were artistically reproduced, and the ivory was attacked by caries similar to the effects of that disease on the natural teeth.

The following item goes the rounds of the press:

A LONG TOOTH.—Punxsutawney (Pa.), *Spirit*: A twelve-year old youth has just been brought to public notice in North Carolina. He was taken to town one day last week to have a tooth pulled, and a correspondent says: The extraction of the tooth was a difficult operation. The dentist tried thirteen times before he succeeded, and when he did pull it out he found it to be just six inches and a quarter long. The cavity extended through the top of the head, the tooth actually bringing some of the hair. The end had the appearance of having been bradded on the top of the head.

Dr. W. T. Magill writes: "I enclose a sample of small disks, cut from Asbestos paper, with a No. 1 harness maker's punch. The design is to use these in place of cotton, in the treatment of exposed pulps, on sensitive dentine, children's teeth, etc. Take one of the little disks in your tweezers, dip it in oil of cloves, creosote or any other preparation you wish to use; lay it carefully in place, absorb

surplus with a little punk, and cover with wax, cement or stopping. If thought worthy of notice give the idea to the profession with my compliments."

The disks are very convenient for use in the manner indicated. By taking balsam of fir or copal-ether varnish to moisten one side, they will adhere to the interior of any tooth.

A dental friend has recently located in a German city, and in spite of the fact that he is a regular graduate and an educated gentleman, he has to place on his card, *Amerikanisches Zahnatelier!* A little friendly retaliation about this time by State boards of examiners all along the line would not be out of place. Every tooth-artist, tooth-workman and tooth-laborer who comes to this "land of the free and home of the brave" claims the right to be examined *in his own tongue*, and begin the slaughter of the innocents at once. The genuine tooth-doctor or *zahnarzt* seldom locates on our shores. As the Germans discriminate against our pork and dentists, we ought to do likewise for the uneducated tooth-tinker.

ST. LOUIS DENTAL SOCIETY, *Editor Dental Review*.—The annual meeting of the St. Louis Dental Society was held at the residence of Dr. McNamara, Tuesday, Jan. 3d. The following officers were elected for 1888: President, Dr. Henry Fisher; Vice-President, Dr. J. Warren Wick; Corresponding Secretary, Dr. William Conrad; Recording Secretary, Dr. J. H. Spalding; Treasurer, Dr. A. J. Prosser. Committee on Election and Ethics: Drs. J. B. Newby, Geo. P. Holmes, W. N. Morrison. Committee on Publication: Drs. A. H. Fuller, W. H. Eames, G. A. Bowman.

WM. CONRAD, *Cor. Secretary.*

ANNOYING DENTISTS.—A collection agency, which does business in Chicago, is being complained against frequently at the Post-Office Department. It prides itself on its ability to collect bad debts. If the first demand is unsuccessful it is followed up with another inclosed in an envelope with the words "Bad Debts" printed in big black letters on the face. These, it is alleged, are sometimes sent to the person addressed in the care of some other person or firm, so that the object of the letter becomes pretty well advertised. Recently an agency sent one of its circulars to a well-known dentist in Washington with the demand for the payment of a debt of \$3 to an alleged New York dental-goods house. It was followed up with the usual "bad debts" which was sent to the Post Office Department. There is a similar concern at St. Louis. Another was recently started at Columbus, O., which uses a rubber stamp to show the object of the inclosures in the envelopes.

In looking over the list of members of the American Medical Association we notice that very few dentists are on the rolls. In the programmes of the meetings of the Section on Dental and oral surgery for the past two or three years many names have appeared as authors of papers, but they were not members of the association then, nor have they ever joined it since. If the Section ever amounts to anything the members will have to go to work and prepare and read papers themselves, as we fear some portion of the constitution has been violated in the past, in inviting contributions from non-members. From a careful search of the records there are only fifteen or sixteen dentists in the United States, who are at this writing, members in good standing of the American Medical Association. After an existence of six years this is a very meagre showing and we submit to the after dinner speakers and other enthusiasts that a reference to the Section, as a mighty influence in professional circles is exceedingly webby and gossamer-like!

THE DENTAL REVIEW.

VOL. II.

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No. 2.

ORIGINAL COMMUNICATIONS.

ARTIFICIAL VELA AND OBTURATORS.*

I BY E. D. SWAIN, D. D. S., CHICAGO, ILL.

The hard palate is a bony plate, forming the roof of the mouth and base of the nose, it is covered by mucous membrane. The anterior three-fourths is formed by the palatal processes of the superior maxillæ, the other fourth is made up by the horizontal plates of the palate bones. The soft palate is a movable curtain attached to the posterior border of the palatine arch, and is continuous with the hard palate. It is a membranous body, controlled by five pairs of muscles, which in conjunction with the muscles of the pharynx, tongue, and hyoid bone, assist in the action of deglutition, propelling the food into the œsophagus without any portion being permitted to enter the nasal cavity or larynx. During the act of speech the soft palate is also either raised or depressed to assist in forming cavities of resonance, of greater or less capacity. Your attention is called to the treatment of the deformities of these parts, the most common of which is cleft palate. Congenital cleft palate is the result of a lack of development of the maxillary bones, arising from hereditary disease, malformations during embryonal life, or lack of nourishment of the bones involved.

There are many varieties of form, general appearance and size of clefts. The cleft may extend entirely through the hard and soft palate, and it is sometimes complicated with a com-

*Read before the Chicago Dental Society, December, 1887.

plete fissure through the alveolar process, with a split in the lip, known as "hare-lip." Again only the soft palate may be involved, or the hard palate alone may be perforated. Accidental cleft palate is the result of traumatism or disease. Syphilis is perhaps the most prolific in its production. Usually, however, we are gravely informed by patients that they have been great sufferers from nasal catarrh.

Congenital cleft of the palate was at one time as commonly treated by surgical means as by mechanism. The former treatment, however, has to a considerable extent been abandoned, because the operation is a painful one to the patient, and difficult for the operator. It often fails to close the cleft because of sloughing away of the stitches or sutures used to hold the parts together. It sometimes fails to improve the speech, even when a complete closure is effected by the operation, because the soft palate has been made too short and tense to properly close the nasal passages by its contact with the posterior pharyngeal wall, which is absolutely essential to produce all, excepting the nasal sounds.

Among the important evils resulting from cleft palate, are difficulty in sucking and swallowing in infancy, and an imperfect articulation in after life. Owing to the two first, many children born with cleft palate die from starvation, devices in the form of rubber nipples, so constructed as to cover the roof of the mouth, thereby closing the passage into the nose, have however saved the lives of many.

The faulty articulation remains a serious affliction to the individual, as well as to all with whom the person attempts to converse; to obviate this difficulty the surgeon and dentist have each contributed much thought and experiment. The difficulty arises from an inability to close the passage between the mouth and nose, this condition is described by Salter in the following language: "When the mouth is closed in effecting certain articulate sounds, the sound instead of being completely stopped, as it is in the natural condition of the parts, is continued on through the nose, so that letters requiring a complete stoppage of the air can not be pronounced if the palate be cleft, but are converted into certain other words or letters which correspond to them."

As I am not familiar with the science of vocal sounds, I shall

not attempt to elaborate upon this theme beyond a further quotation from Mr. Salter illustrating the effects produced. He says, "There exist three straits, or points of stricture, where the passage of air and sound may be suddenly shut off at will, or suddenly started. These are at the lips, the teeth, and the soft palate. The closure at these several points is produced by the apposition of the lips, by the pressure of the margin of the tongue against the upper alveolar arch, and by the contact of the root of the tongue with the dropped soft palate.

"The letters formed at the first point, are called labials; those of the second, dentals; those of the third, palatals. But at each of these three points, methods of closing, or starting, vocal sound may be varied in three ways, giving nine sounds or letters:

"1st. The stoppage may be completed with gentle breathing.

"2d. With aspirate breathing.

"3d. The stoppage may be complete only at the mouth, thus forcing the breath through the nose.

"With a closure of the lips with gentle breathing, I pronounce 'B,' the same with aspirate breathing becomes 'P,' but if the lips are closed, and the sound carried on through the nose, it becomes 'M.' So with the dentals. With a closure of the lips, gently breathing, we have 'D;' aspirate breathing, 'T.' With the nasal combination, we have 'N.' With the palatals, we get by the same process, 'G' hard, 'K' aspirate, 'NG.,' palato-nasal.

"Now what the cleft palate does, is to change the mutes B, P, D, T, G hard, and K, into nasal semi-vowels —M, N, and NG; for by destroying the integrity of the party walls between the mouth and nose, by establishing between them a communicating cavity, it renders it impossible for any oral closure to bring the escape of air and of sound to an absolute stop. Arrested at the lips, or alveolar arch, it continues to escape through the nose. This explanation is proven not only by the physical necessities of the case, but by the fact that pinching the nose of one with a cleft palate, enables the person to pronounce the labial and dental mutes."

The following examples are given by Mr. Salter, to illustrate the changes produced by cleft palate:

"Both brothers drove in a gig to Dorsetshire," would become: "Moth mruthers nrove in a nging noo Norsenshire."

"David caught a bad cold," becomes "Navid ngaaughn a man ngoln." Bride becomes Mrine; Bad becomes Man; Tape becomes Name; Dagger becomes Nanger.

This is exactly the reverse of what takes place with a cold in the head, or in case of nasal polypus, where the nose being already stopped, the stopping of the mouth stops every thing, and the nasal semi-vowels are converted into their corresponding mutes. M into B, N into D, N G into G hard. Thus, "The afternoon was fine, though the morning was rainy," becomes "The afterdood was fide, though the bordig was raidy."

External deformity from cleft palate only occurs when the cleft extends through the alveolus and lip, producing hare-lip; an early operation by the surgeon is usually successful, and (except in extreme cases) there remains but a slight scar, when adult age has been reached, to mar the symmetry of the upper lip. The person so afflicted, however, still suffers through life from difficult deglutition, and, as I have just attempted to show, from difficult articulation; and to remedy these two difficulties, the skill of the surgeon and dentist have been enlisted.

When the first attempt was made to provide an obturator, or artificial velum, is not known, but there exists evidence that as far back as the fifteenth century mechanists endeavored to stop the breach by artificial means.

In 1649 one Isaac Guillemeau published a treatise upon this subject, in which he mentions the name given appliances made for this purpose by the Greeks.

1552.—Hollerius proposed to stop the aperture with wax, or sponge.

1563.—Alexander Petronius suggests wax, cotton wool, and sponge. He is the first to mention a gold plate, with a sponge attached.

1579.—Ambroise Parè recommends that "the cavity be covered over with a gold or silver plate, made like unto a dish in figure, and on the upper side, which shall be towards the brain, a little sponge must be fastened, which, when it is moistened with the moisture distilling from the brain, will become swollen and puffed, so that it will fill the concavity in the palat, that the artifi-

cial palat can not fall down, but stand firm, as if it stood by itself."

1649.—Isaac Guillemeau gave a drawing of a gold plate and sponge similar to Parè, but says "as it is not always possible to adapt the plate perfectly, a lining of sponge, or lint, should be applied."

1685.—Nic Tulpius recommends the same mode of treatment.

1715.—Garangeat improves Parè's instrument by the addition of a stem, in the form of a screw and nut, to hold the sponge in place, and proposes moistening the sponge with water before insertion.

1723.—Fabricii Hæironimi recommends sponge and lint, on a silver plate. He is, however, the first writer who discriminates between congenital and artificial clefts.

1734.—R. Wiseman, sergeant surgeon to King Charles II, recommends filling the cleft with a paste compound of myrrh, sandarac and other ingredients, but fails to tell us how this paste palate was retained in its place.

1739.—Heister returns to the gold or silver plate with sponge attachment.

1754.—Astruc, in a treatise on syphilis, recommends, for the first time, a silver button attached to a plate of the same material.

1786.—Pierre Fouchard comes to the front with an improvement, complicated to be sure, but it is refreshingly new. His improvement consists of metallic wings attached to a screw and nut, the screw working through a tube upon a metal plate. By use of the nut the wings were forced back, and at the same time spread, so that a curtain of sponge attached to them closed the aperture.

It will be observed that for two hundred years prior to Fouchard, no practical advancement had been made.

In 1820, M. Delabarre mentions the use of elastic gum in the restoration of the velum and uvula.

1823.—Mr. Snell announces that he first obtained a correct model of the mouth, on which he mounted and fitted his obturator. This is the first mention made of securing a model. A further description by him of his method shows that with metal plate and elastic gum he laid the foundation, theoretically and practically, for all that has since followed.

1845.—Mr. Stearn constructed an appliance upon the Snell principles, introducing the spiral spring to sustain the elastic gum velum. He also constructed wings, with grooves, into which the edges of the cleft were supposed to fit.

1857.—Mr. Sercombe mentions the use of vulcanized India rubber. His velum was constructed of two pieces of vulcanite, one extremely thin and large enough to close the cleft, the other the same form, but smaller and thicker, simply to reinforce and sustain the larger, which he found sagged when loaded with mucus. This velum was stitched to the gold plate.

In 1862, Mr. Williams exhibited an obturator, the portion covering the hard palate, being made of hard rubber, the velum of soft vulcanized rubber.

1864.—Dr. Norman W. Kingsley brought before the Odontological Society of Great Britain his method, which, though similar to that of Mr. Stearn, was a great improvement. So far as the record shows, he was the first to recommend plaster of Paris to secure an impression. Also the first to advise preparing the elastic rubber velum in metallic molds, thereby rendering duplication of them a simple and easy matter.

Though somewhat modified by himself and others, his obturator is the one in most general use throughout the world. Obturators should not be inserted before the child attains the age of twelve, or until the permanent teeth are erupted, for harm may come to their arrangement, and the plastic alveolar ridge be spread, thus widening the cleft. The requirements of an obturator are: That it should be constructed of a material which admits of being molded to any required shape and retain this shape to the end. That the material must be one which will not absorb to any extent the fluids found in the oral cavity. That when ready for insertion, it shall have been so constructed as to fully close the cleft in the hard palate, extending high enough to nearly close the nasal passages, and to this should be attached a velum a little wider than the cleft in the soft palate, extending back to the pharyngeal wall without undue pressure upon any point. Pressure incites irritation, and if continued, absorption, which, in time, might enlarge the cleft. Hence, all appliances, such as sponge, lint or springs, which depend on pressure upon the sides of the cleft, are objectionable.

In vulcanite, hard and soft, we have the only known material filling all these requirements.

The first and most important question to be considered is the method of securing an impression. The conditions are such that an impression, of all the parts involved, can not be taken at once; in fact, a correct impression of the parts of the soft palate involved, can not be secured at all, because of their flexibility, irritability, and liability to contract, and sometimes quiver when touched by a foreign substance; no amount of previous treatment by the operator will overcome the flexibility or contractility of these parts. Treatment will, however, overcome the irritability, prevent retching by the patient, and make the labors of the operator much easier and more certain.

The best material in our hands is plaster of Paris, the reasons must be patent to all.

Dr. Kingsley gives two or more methods. One is, to use the usual impression tray, extended back to the posterior line of the palate bones, with gutta-percha base plate; first fill the cleft in the hard palate with the mixed plaster, using a clean flexible spatula for the purpose, coating quickly with soap or oil and having the tray ready to insert at once, both bodies of plaster being soft to conform to each other. When hard enough to break with a clean fracture, remove the palatal impression and then with a strong pair of tweezers, force that above the fissure backward into the cleft of the soft palate, and remove from the mouth; the two parts are then placed in position, the rough surfaces on each answering for guides. For the other method, he forms a tray out of base-plate gutta-percha, for the palatal impression, warming the gutta-percha and molding it, as near the proper form as possible, that the minimum amount of plaster only be used; this is removed and cut away smooth where the fissure is indicated; a guide is then cut, and a hole made through it for the insertion of a rubber tube attached to an ordinary vaginal syringe; the impression is returned to the mouth and the piston of the syringe (which is filled with a thin mixture of plaster) is quickly inserted, the tube passed through the hole, and sufficient pressure exerted to fill the fissure; the tube should be removed before the plaster has set sufficiently hard to make its removal difficult or impossible. No careful operator would have returned

the palatal impression without first soaping or oiling that portion with which fresh plaster was to come in contact. This impression is removed from the mouth by the same method as described for the first one.

For securing an impression of the cleft of the hard palate, Coles recommends a tray made of pewter, in two pieces, like two spoons, with one-half the bowl cut away to make them rights and lefts, the handles fitted to lie one upon the other, to guide in placing the two halves together, after removal from the mouth. One-half is loaded with plaster and carried into and against one side of the cleft; when hard, it is removed, trimmed smooth on its mesial surface, and coated with sandarac varnish; when it is dry, oil, replace in position and the other half is loaded with plaster and carried into position, against the other side of the cleft; when hard, the half first made is removed by crowding backward, as in the other cases; upon removal of the other half, they are placed together as indicated by the handles, cemented, and the model for subsequent work secured.

The method I have resorted to is a modification of this last one. Take a common tin spoon, such as are now stamped, and cost almost nothing. The tip of the bowl is cut off, usually leaving two-thirds. This is split through its center, from behind, towards the handles, as far as the case requires. The halves are then formed with fingers and pliers to conform to the shape of the cleft; if necessary, additions to it may be made with base plate gutta-percha. The handle may be bent to throw the tray higher or lower, as required; this is loaded with fine, quick-setting plaster, adding a pinch of salt to the lukewarm water, in which it is mixed; carry into the cleft a little back, and draw it forward and hold steadily until it is hard enough to remove. This is accomplished by carrying it far enough backward to disengage it from the cleft, and removing from the mouth, which occupies less than half the time of either of the two last methods, relieving the patient just so much from the most disagreeable part of the operation. From this impression a mold is secured, divided into two pieces at the mesial line of the cleft; from this a model is made in paraffine and wax or plaster. This is trimmed at its posterior border to a line with the palate bones. To it is added a sheet of tough wax or gutta-percha, which is trimmed

and molded to the proper size and form of the desired velum. If a soft rubber one be desired, pieces of plaster may be formed about this, to be duplicated in tin, care being taken to so place the plaster pieces that they can be molded in a common molder's frame, drawing without breaking the sand used. When it is desired to secure the palatal impression, the model may be trimmed so that the palatine surface edges will come a trifle outside the cleft, the edges bearing upon the palatal bones; through the model make a hole so located as to hold it in place, with a string passed out through the nostril. For carrying the string into position, a needle made of wire, bent to a half circle, with an eye in one end, is used. All being ready, the string attached to the model is carried to its place, and gently held in position by an assistant or the patient. The palatal impression is then secured, as in any ordinary case, for artificial dentures. Before obtaining this last impression, however, a gold pin should be prepared with a stud on one end, in this manner **L**, placed in the model with the stud end on its palatal face. This pin is vulcanized into the palatal plate, the mark made in the impression by it giving it, when replaced there, the proper place and direction, and to it is attached the velum. All vela should be considerably convexed on their upper surfaces, sloping to the rear, to admit the draining off of collecting mucus.

In 1872 or '73, Dr. Gunning, of New York City, advocated constructing obturators and vela of hard vulcanized rubber.

As to the success attending the use of these appliances, I am compelled to admit that it is doubtful and varied. While the piece may be everything desired from a mechanical standpoint, so much depends upon the judgment, patience, and pride of the wearer in their use, that one hardly ever feels a confidence and willingness to commence, expecting success. I will, as briefly as possible, report a few cases from my own practice.

Twelve years ago George Williams, a German, aged 27 years, was brought to me by a Wisconsin physician. The cleft in this case involved both the hard and soft palate, and, as usual, the largest half of the opening was to the left of the median line. By the methods mentioned, I secured an impression, made and inserted an obturator — the palatal plate of hard, the velum of soft vulcanite. The man spoke English very little, but his physician

informed me that his German, which was hardly recognized as such, was in a week's time quite improved. I prepared for him two extra vels, and taught him how to place them; he started for home much pleased. I heard nothing from him for two years, when he entered my office, with the appliance in his pocket. He informed me that it had been every way satisfactory, until by accident he lost the thumb and two first fingers from his right hand, since which time he had not been able to insert it. I made for him an instrument, and taught him to insert it with his left hand, aided by the instrument.

A lady from Marshalltown, Iowa, about 30 years of age, music teacher by profession, was advised to come to me for help. The cleft was large in the soft palate, and extended into the hard palate about two-thirds of the way to the teeth. I constructed an appliance of hard and soft rubber upon the same principles as the last mentioned. After a week's wear I pronounced it a decided failure. I then made one for her after Gunning's method, entirely of hard rubber. I first made a wax model of the fissure in the hard palate, added the velum, and then flaked and vulcanized, polishing perfectly. This I inserted, held it in place with the string attachment, took an impression for palatal plate, vulcanized it to the first part, making one piece. This proved quite a success. Soon after returning home she wrote me, "My friends hardly knew me, because of my improved speech. I am able to sing very well some of the Sunday school songs." Since then I have made four; two were partially successful—the other two failures, so far as improvement in speech was concerned; but all have aided in swallowing, smoking, etc.

About a year ago a young man applied for treatment. I secured the impression, and appointed a time for his return. He came, and took from his pocket a very imperfectly made hard rubber plate, with an extension to the rear about three-fourths of an inch long. He said, "My aunt was troubled as I am. She is dead, but I have kept her old plate; can't you fit this in?" I finally constructed an appliance after the usual methods, but could not get it to its place, owing to the peculiar shape of his mouth. Finally I made for him a gold plate, the posterior border of which extended backward in the center, and to this projection I attached a hard rubber velum, with a hinge to the cen-

tral portion. This he is now supposed to be wearing. When last seen it was proving only a partial success.

All these appliances were attached to natural teeth by clasps.

SOME PRACTICAL HINTS FOR THE OPERATOR.*

BY GARRETT NEWKIRK, M. D., CHICAGO, ILL.

The larger part of the mechanical work of the world is done with a few simple tools. The man who is an expert with six instruments is a power. The carpenter does the greater part of his work with the simple saw, hammer, square, and chisel. The plane is only a set chisel. Whoever is an expert in the use of these, is a good carpenter. His measurements will be accurate, his joinings close, and his finished work free from the marks of the hammer.

The essential tools of the blacksmith are also few—hammer, file, chisel, drill, square—these five are his stand-by instruments. If he knows how to use them in the best manner, he is a good blacksmith. The bricklayer putteth all his tools under his arms, and goeth forth whithersoever he will, at whatsoever price he will.

Coming to higher planes (if there be higher than these), look for a moment at the surgeon. His principal instrument is the knife, his chief accessories the saw, probe, chisel, and forceps. The catheter and canula are but hollow probes; the trocar is a form of the needle; the trephine a circular saw, with or without a central drill.

Go into a great workshop, where a thousand wheels revolve, and masses of iron, steel, or wood are being converted from crude into definite forms—wherever you look you will see that nearly every thing is done by different sizes of two simple instruments—the chisel and the drill.

The principal instruments of the dentist are the chisel, probe, drill, and plugger. The scaler for removing tartar, and the hoe and hatchet excavator are but forms of the chisel. The bur also, if we may indulge in fine distinctions, consists of a series of

*Read before the Central Illinois Dental Society, October, 1887.

small chisels for use with rotary motion. Pulp-canal broaches are forms of the probe.

On analysis we find that all the instruments in the catalogue are but modifications of a few primitive simples. The dental engine can scarcely be classed among instruments. It is rather an instrument driver, a motive power. We find that the simpler forms of instruments are the ones we depend upon to perform the greater part of our work. Show me the man who is thoroughly expert in the use of one chisel, six excavators, three scalers, four pluggers, one fine broach, and one knife, and I will point you a good operator. If he can handle these as they should be handled, he can all the others; or if not, he can readily learn. As the instruments we use the most, are the most important, it follows that they should be carefully studied and selected, kept in good condition, and placed in convenient order.

CHISELS.

Dr. Marriner told us several years ago, that our chisels were nearly all too coarse, too thick and heavy, and told us why. I have acted on that hint ever since, but in order to do so, have had to make several for myself, and grind down those that I have bought. A thick, heavy chisel is rarely needed, and whoever gets used to the more delicate forms will wonder how he ever got along without them.

The use of simple, plain, but thin and sharp chisels, does away largely with the necessity for separating files and disks; and let me say in this connection that I am a believer in somewhat heroic chiseling. Many operations fail because of timidity on the part of the operator in cutting away weak margins, already tainted with decay, or liable to be broken.

As we all like to do as much as possible with the instrument we have in hand rather than take the time and trouble to change, I wish to call your attention to a form of chisel possessing the greatest number of possibilities of any I know. It is the one which stands in the S. S. White catalogue as No. 45. There are smaller sizes, 44 and 43, but if 45 is kept sharp, it will grind down to the smaller sizes soon enough, and the operator will never lack for those.

As the instrument comes from the maker it is rather clumsy — the blade being twice as thick as it should be. I used one for a

year before it occurred to me that I could improve it by grinding it down thin.

It is a great chisel for fissures, especially in lower molars. It cuts forward and backward—by a turn is changed from a right to a left. It should be held as one would hold a pen, steadying the hand by the third and fourth fingers on the front teeth. The “push” cut is made with the “muscular” movement of penmanship—that of the arm; the “pull” with the “finger” movement.

Another useful form of the chisel is one with concave edge, for beveling or rounding the edges of cavities, preparatory to filling. The set of Dr. Talbot is based on this principle. I have only two, home-made.

An excavator, as before said, is only a form of chisel. As it is formed for making an excavation, it should agree somewhat in size and shape with the place to be excavated. For a long time we used square cornered instruments where we should have used round.

The “spoon” shaped and “rapid” excavators were suggested by the right idea—that of having something to slip under the decayed dentine, and lift it out.

No great variety is needed. One or two nearly straight, two or three with slightly curved shanks, and about two or three pairs of rights and lefts will do the work. We seldom have need of the larger forms. It does not follow that because a cavity is large, we need to scoop it out all at once.

I conceive that a curved blade excavator like the “spoon” is better adapted to easy cutting than a straight hatchet or hoe, because the force may be exerted in the line of the blade. There is the same difference that obtains in favor of paring an apple instead of scraping it.

There is less force required, and less irritation to the sensitive matter in the dentinal tubuli.

I think that without great inconvenience we could dispense with nearly the whole list of hatchet and hoe excavators. A few special forms are required, as for example, two or three long hatchet blades for reaching down into deep proximal cavities in bicuspid and molars, two or three narrow blade hoes for retaining grooves in surfaces not directly accessible by the engine. But in these cases we may often do the work with greater ease,

quickness and certainty by means of the right angle attachment and round burs.

SCALERS.

I believe that there is no class of instruments so little studied and so imperfectly understood, and I may add so little used where they should be, as the scalers. The removal of tartar from the teeth is not done as it should be once in fifty cases, and a principal reason is found, not in the insufficient *number* of instruments, but in the lack of a very few that are really adapted to the work.

Many of the so-called scalers in the market are distressingly clumsy and unwieldy. They are utterly incapable of accomplishing their work with anything like thoroughness. They require for their use the exercise of an amount of force not called for with proper instruments, properly directed.

Where do we want to apply our force? Why, just at the line of union between the tooth and the tartar, of course. Now, a half dozen instruments are all we need in the great majority of cases to clean a set of teeth, and thoroughly. One or two small chisel scalers—after Cushing—thin, delicate, curved, will, in the majority of cases, remove the deposits nearly all the way round the tooth, and with the exercise of but little force. A right and left curve chisel for the gum margins of bicuspid and molars, something like Harlan's. One or two "hook" instruments for reaching up in certain locations beneath the gums, and a three-sided point, nearly after the Riggs' pattern, will complete a set sufficient for almost anything in this line of work.

The wood points for carrying polishing powder are valuable, but there is no use of buying the assorted sizes—the medium wheel No. 6 is all any one needs. Take a screw-cap porte-polisher, throw away the cap, bend the points together a little so that the wood shank will fit snugly; break off about half the shank and insert close up to the wheel. There it will run true, no wobbling. When done with, it can be picked out in an instant and thrown away, and the mandrel is ready for the next case. A little cup—the lid of an ointment box will do—should always be ready for a thimble full of pumice and a few drops of water, and cleaned after each operation. This insures a new point and fresh powder for each case.

A small wide-mouthed bottle or porcelain cup should

always stand convenient to receive a bur the moment it is discovered to be dull, that it may not be taken up again till sharpened, and it is economy to have a sufficient number so that a supply may be kept going and coming for repairs. Different sorts of burs, small round, large round, wheels and cones, drills, etc., may be kept very conveniently in small cups or jars, say about one and a half inches deep.

The best drills for starting pits, retaining grooves, etc., are small fissure burs, with the end wedge shaped, and kept sharp on an Arkansas stone. The Arkansas stone should not be in a closed case, but open, and where it can be available in an instant. If you keep one in a box, take off the lid and throw it away. An old carpenter told me once that no matter how great his hurry it paid to take time to sharpen a dull tool. The resolute determination not to use a dull instrument is a valuable aid to success.

Much is saved to order and convenience by having several of the drawers of the cabinet divided into apartments adapted to the reception of all sorts of small articles so that each may have its proper place, and be constantly at hand when wanted. Any dentist can do this for himself at odd moments. Whenever he finds himself in the possession of an article for which he has no place, let him make a place for that article.

Thin bleached muslin, cut or torn into blocks about 3x4 inches, is a very neat and convenient article to have by the dental chair.

For examinations of the lower or upper front teeth, or in removing tartar from them, where we have to keep the lip out of the way, the muslin has sufficient starch to take possession of the slippery mucous membrane and hold it against considerable muscular resistance, and it is much more pleasant to the patient than the insertion of the naked finger.

The muslin is also valuable when operating for the removal of tartar to cleanse the instruments from time to time, and for absorbing the blood as it oozes from the gums, obscuring the view of the operator from the particles to be removed.

One necessity to the operative department is floss silk. It is convenient to have the spool hung on a wire at the back of the cabinet, and a free portion of the thread passing over the top and through a little ring in front, say at the top of the corner

post nearest your hand. It is then always and instantly ready.

RUBBER DAM.

With reference to the rubber dam and its application, experience leads us to say :

First, that one has but little use for either a light or heavy article. A medium, not a light or a heavy medium as the salesman will say, but a medium medium, is the best for nearly all places, and can be used anywhere.

Second, rubber begins to deteriorate from the hour it is made, and the newer the article that comes to our hands the better. Hence, it is well to buy in small quantities and often, and of some reliable dealer.

Third, cheap letter envelopes afford the best means I have found for holding rubber pieces one may wish to use again for the same patient. I have an apartment in the large drawer of my cabinet expressly for them. The best way is to seal the envelope and then clip the end. Of course the piece of dam should be washed and dried immediately after using, and before it is placed in the envelope. Some advocate placing the dam always over several teeth, though the operation should be confined to one proximal cavity or two adjoining. I think this is seldom necessary, and often objectionable. The "drawing" sensation and consequent discomfort of the patient is increased, and moreover there is apt to be a rapid pulling together of the separated teeth, if they have been previously wedged.

In placing the dam on two teeth—say a bicuspid and molar or two molars, it is usually better to pass it over the posterior tooth first, adjust the clamp, then to the next which may need nothing to retain it, or at most a ligature of floss silk. For filling simple crown cavities in molars or bicuspids, or buccal cavities on any of the teeth it is seldom necessary to pass the rubber over more than one tooth, and there is less liability to leakage by so doing.

It is necessary in these cases however to have an instrument adapted to the contour of the tooth for crowding the rubber above the margin of the cavity. Dr. Chupein has made such, which is on sale, but you can make something similar. The clamp recently invented by Dr. D. B. Freeman, 16 Aberdeen street, Chicago, is an excellent appliance for this purpose, I think the best of its kind.

I have been asked to say something in this paper about the spittoon. I shall certainly meet no objection in saying, first of all that it should be kept clean, but how? Having worked for many years without the luxury of running water and a "fountain" spittoon, I am fully prepared to appreciate the one I have now. It completely settles the question for those so situated as to have it.

But for the ordinary spittoon, there is one agent quite well known, widely distributed and cheap, in fact available to every one, the use of which has not been as general as it should have been. The chemical formula of this agent is H_2O ; Latin, aqua; German, wasser; English, water. Cleanliness simply requires two things; first, plenty of water and second, careful attention to its use.

A spittoon should have a glazed surface. The painted articles are frauds. There is nothing better I think than one of "granite" iron, if one makes sure it is entirely smooth. Avoid all these affairs with "patent insides." "Traps" they are called. They are better traps for filth than anything else.

Keep this glazed ware spittoon half or two-thirds full of H_2O . After each operation involving loss of blood, or an excessive flow of saliva, empty and replace with the same chemical. This change should always be made at the end of the day's work, and several times a week the article should be scalded with hot water and an alkali—say a little concentrated potash or soda. Pyle's pearline is a good preparation for this and many purposes. It was first brought to my attention for use in the dental laboratory by Dr. Moody. He recommended it especially for the removal of black from the hands after the manipulation of vulcanite flasks.

ARTIFICIAL CROWNS.*

BY DR. A. E. MATTESON, CHICAGO, ILL.

To the progressive dentist the subject of Artificial Tooth Crowns is one of very considerable importance. From an insignificant percentage of the aggregate amount of our practice, it has in a comparatively few years, assumed a proportion far in excess of all other combined mechanical operations performed.

*Read before the Chicago Dental Society, January, 1888.

Those who have read the dental magazines during the last decade, can not but have noticed the space which is devoted to articles on this subject; each one claiming to be an improvement on any and all others, and the inventive genius which has been developed is truly wonderful.

Since the article of our friend, Dr. Morrison, published in the *Missouri Dental Journal*, in May, 1869, there has been an entire revolution in the general practice of extracting crownless roots of teeth, which then prevailed. And here let me say, if there is any line of practice which the writer regrets, it is that of having followed in the "teachings of the fathers," and extracted the supposed worthless roots; which, if they had been placed in healthy condition and preserved to the present day, might be made to support crowns, and also form piers for "bridge-work;" thus, with comfort to the wearer, give employment to other organs of mastication. But he, like others, worked according to his light.

To attempt to give a description of all the different methods, or even to name them, would consume more of the time of this society than would be profitable, and I shall not weary you by so doing.

There are probably very few so-called systems of which an extended description may not be found in the publications devoted to dental subjects. I can not, however, refrain from mentioning the system as introduced by Dr. J. Rollo Knapp. An extended description thereof, with illustrations, may be found in the *Dental Cosmos*, February, 1887. At the clinic before the dental section of the International Medical Congress at Washington, Dr. Knapp crowned the root of a bicuspid with a porcelain-faced crown, and your essayist freely confesses that he never saw a more beautiful piece of dental mechanism. Not only was the adaptation, articulation, and contour perfect, but the work was executed in a thoroughly artistic manner. The finish was all that the materials could develop, and I doubt if old Vulcan could have excelled it.

Gentlemen, I have been struggling at "crown work" for perhaps as many years as any in this society, and have taken some considerable pride in the attainment of the points of excellence which have been named, but I have never seen any which will

bear comparison to that of Dr. Knapp ; and I have had the pleasure of witnessing the clinics of very many good operators, and have seen the work of others, as performed for their patients.

Now at this point I wish to ask a question, and also give an answer to it. Why is this work of Dr. Knapp pre-eminently the highest in point of excellence ? There are several reasons why it should be so. Dr. Knapp has the ability, and has had the training. He has also the clientage willing to remunerate him for his talents. According to the amount of the fee is the most artistic work appreciated, and from what I can learn, he is striving for appreciation.

To the class of patients who are unable to remunerate the writer for his best efforts, the "Logan Crown" for the ten anterior teeth has proved the most satisfactory. They are kept in stock in the dental depots in such variety of shades and forms that it is rare indeed that a case is presented for which such a crown may not be obtained, leaving nothing further to be desired in those respects ; and if the root is in such a condition that a close adaptation to the crown may be obtained, and the articulation is not such as to cause an undue strain on the anchorage, this crown is undoubtedly the best in the market. And here let me say that it is of the utmost importance to the permanent success of any crown, that the adjustment of the crown to the root is such that their cervical ends are in immediate contact, with the least possible space between them. The difficulty of obtaining a close joint is greatly enhanced when caries, or a fracture, extends beyond the gum line, in the direction of the alveolar process, and is in proportion as this deviates from the line of the gum at the neck of the root, and out of the line of vision.

By following the method described by Dr. Stowell in the October number of the *Cosmos*, this difficulty may be overcome, and the all porcelain crown used.

Crowns for the molars and bicuspid—*not* exposed to sight in ordinary conversations—made of gold and platinum plate, or gold perfectly fitting the circumference of the root with a perfect articulation, and formed in contour, are undoubtedly capable of standing more hard wear and less liable to need repair than those of any other material, and they are on the whole more serviceable.

Owing to the complicated requirements of root-crowning,

there is no one system which is the best in all cases, and there are objections which may be fairly offered to all so far as presented.

The ability of the dentist is frequently tested to the utmost to furnish that which will possess the fewest defects. The objection to the gold crown is the inharmonious exposure of the metal. To the all-porcelain—the liability of fracturing with the front teeth, and the difficulty of filling to the root in the back. And with the porcelain-faced gold crown—the liability of fracturing the porcelain and the difficulty of repairing. And with all the before mentioned the uncertainty of anchorage.

I can not refrain from mentioning the crown introduced by myself for the front teeth. Having during the past five years used it extensively, and in many most trying positions, it has undergone satisfactorily the severest tests, and I feel justified in believing it to be the strongest so far presented. It has objections, but the advantages are far in excess.

It is an axiom that no structure is stronger than its weakest part. With all crowns, so far as the writer has observed, the weakest point is the anchorage. The next weakest, when the crown is faced with porcelain, is in the danger of fracturing the porcelain front and the difficulty of repairing. Both of these are reduced to the minimum with the last mentioned crown.

The objection to this crown is the slight margin of the shell of gold which surrounds the front. This exposure of metal would be considered as insignificant were it a filling, and no one would hesitate to insert one in a natural tooth on that account.

In regard to anchorage, I am satisfied that amalgam is the strongest and best when it can be introduced in small pieces, and thoroughly worked into, and filling the cavity as it can be, in this crown.

Next to amalgam, gutta-percha, except in the anchorage of crowns with extensive lateral articulation and with such, when the amalgam is not used, the zinc cements are best. With a direct articulation I can conceive of nothing more to be desired than gutta-percha.

A description of the *method* of its use may not be out of place. Before any crown is anchored it is understood that the root has been made aseptic and filled at the apex. One or more platinum or platinum-iridium wire [screws are inserted in the

pulp canal, fitting tightly; screws are, however, unnecessary if a sufficient chamber can be made as is generally the case with a molar root. The crown fitted to the root. The cavities in both root and crown filled with warmed gutta percha to such an extent as the operator thinks will be required when the crown is in place. Cut a disk of blotting paper to fit within the crown and place it on the gutta-percha, warm, and apply it to the root; the paper acts as a plaster and permits the easy removal of the crown, for the purpose of adding to or removing a surplus of the gutta-percha, until the amount necessary is indicated. Then remove the gutta-percha from the root and crown, and unite the two. By the addition of enough gutta-percha to make up for space occupied by the paper, the requisite amount of this filling is given. Now thoroughly dry the end of the root and cavity, also the crown and into both flow oil of Cajeput, heat the gutta-percha as hot as can be borne in the fingers and dip in the oil and press into the crown and again place on the root and force it home. One very great advantage by the use of gutta-percha, is that the crown can be removed in case fillings are required in approximate cavities of teeth in front or rear, and again reset with very little trouble.

There are times when the conditions of a root of a front tooth is such as to require considerable time in bringing it into a healthy state.

A temporary crown can be made in a few minutes as follows, select a plain rubber tooth, suitable in color and size with cross pins. Double eyes are formed of tinned broom wire and passed over the pins in the tooth, and the two ends of the wire are twisted, forming a crude screw; a little soft solder unites the two. The screw is cut the right length and bent so as to fit into the pulp-canal and bring the tooth into line. The attachment and contour is completed with gutta-percha and this "make-shift crown" can be worn comfortably by the patient for weeks if necessary and removed for treatment and replaced.

ORAL SURGERY.

PROF. BROPHY'S CLINIC AT THE CHICAGO COLLEGE OF DENTAL SURGERY,
NOV. 29TH, 1887.

Reported by Mr. R. Herrmann of the class.

Patient, Mr. T. S., age, 55 years.

Gentlemen:—The patient upon whom I am about to operate is affected with a neoplasm—an epithelioma; also termed a cancerous tumor, it is a malignant form. It is indeed not unlike the affection of which Gen. Grant died, and also with which the Crown Prince of Germany is now said to be suffering. The growth in the case of the Crown Prince being confined to the larynx. (The patient was here admitted.) But in the case before you the epithelioma is situated in the back part of the mouth; it extends from just in front of the tonsil on the right side, over the region of the soft palate to the median line, downward beneath and along the side of the tongue and lingual surface of the lower jaw, as far forward as the cuspid tooth.

In operating there is danger of severing the internal maxillary and inferior dental arteries, if they are divided I will ligate them, and perhaps in order to do this, will make an external incision from the angle of the mouth to the angle of the jaw, but this will not be done unless absolutely necessary. The inferior dental artery is a difficult one to manage if severed, especially the end leading into the inferior dental canal, here we must sometimes, plug the foramen.

The patient has expressed a desire to have the operation performed without taking an anæsthetic. I will not however operate without a local anæsthetic, as with no agent to allay the pain, I could not be sure the patient would be quiet enough to enable me to proceed without interference on his part. I will therefore inject a four per cent. solution of cocaine, which will render the operation comparatively painless; besides, the patient being conscious, will be able to assist us, and also expectorate; this will be a point in our favor, because we need not be afraid of the blood passing into the trachea and obstructing respiration.

With the hypodermic syringe I inject cocaine into the tissues in several places, and will wait about fifteen minutes for it to produce anæsthesia.

The time having elapsed, I find sensation in the parts is now sufficiently obtunded. I draw the cheek backward with an instrument constructed especially for that purpose, and first make an incision all around the diseased part. I can now see better how to avoid bringing the knife in contact with the important vessels mentioned, and which I hope to be able to leave intact; this I can not be sure of doing however until I ascertain how deeply the disease is seated. After the incision is made the patient is allowed to sit up at frequent intervals on account of the profuse bleeding and regurgitation of blood. The hemorrhage which you see is nothing more than capillary and venous, none of the arteries have been severed. The tumor is now removed and will be passed around the class for your inspection. I wish to call your attention especially to this end of the mass which was attached to the soft palate and extended back to the fauces; from its appearance I am not sure that I have succeeded in bringing all of the diseased tissue out. There is profuse hemorrhage which I will allow to subside somewhat before continuing the operation. Care must be taken to avoid wounding the salivary gland. You will notice the color of the blood in this hemorrhage, you can readily see it is not arterial, it is capillary and venous. Let me call your attention to the shape of the instruments we are using, which are especially adapted to operations of this character.

It is better to do tearing than cutting in parts that are highly vascular when it is practicable to do so. I now remove another part, in doing which the patient complains of pain. You observe the effects of the cocaine are passing off. I remove another portion, the patient does not complain more than before. It is not only necessary to remove the seat of the trouble but also a little beyond it, so as to be sure the whole of the diseased tissue is eradicated. As I make another incision the patient experiences slight pain; I now take away the last fragment. As to after-treatment, the parts should be kept well cleansed. The patient has borne the operation remarkably well, the cocaine having produced very satisfactory results.

The patient will appear before you at future clinics.

AN ABSTRACT OF A PAPER ON PORCELAIN FILLINGS.*

BY DR. E. C. MOORE, OF DETROIT, MICH.

* * * It is not only possible, but practicable and preferable in a great many cases, to substitute porcelain as a filling, for that of gold, amalgam, or cement, to say nothing of the variety and modifications in crowns, or partial crowns, and bridge work, all of which may be made by this system, with the aid of recently improved gas furnaces.

Some of the advantages peculiar to this process, and material for the filling of the teeth, are —

1st. The indestructibility, and permanency of color.

2nd. Its near approach in color and translucency to the natural teeth, and it being in consequence less conspicuous.

3rd. The ease and comfort in the accomplishment of such happy results to both concerned.

4th. Its applicability, or admissibility, when other means of arresting caries would be accomplished only after hours of misery to both operator and patient.

* * * Operations have been made with porcelain, from large contours, and crowns of the six anterior superior teeth, preserving the pulp alive to very small corners, particularly the incisors. Some of these were of that kind where both proximal surfaces were decayed until the cavities merged into one, and leaving only the thin enamel on the labial portion intact. This was cut away in the preparation, and what we will term a horizontal section substituted. Others were of such character as involved only one proximate surface, and perhaps a third or fourth of the tooth, necessitating what we may term a vertical section. Others, again, were of that kind usually denominated "mere shells"—a comparatively small opening, but with almost the entire dentine gone; in such cases, restoration by gold would be impracticable, where it was desired to leave much of the enamel of the tooth intact.

* * * The weak point in this work (if there be any) lies in the use of cement. Cement of course, poor as it is, is the best we have. After proper preparation of the cavity, a piece of

*Read at the Chicago Dental Society Clinic, December 14, 1887.

platina of suitable size, and about 30 to 40 gauge in thickness, is placed over the cavity, and by means of suitable burnishers, is made to partake of its shape, particular care being taken to have a complete contact at the periphery; to this matrix of platina, loops or pins are soldered, for the double purpose of attaching the porcelain, and retaining the piece in the cavity when finished; the body is then built about these pins, or loops, to restore the proper contour, and it is then baked in the gas furnace; usually two bakings are necessary to give the proper shape and finish of surface. The thin platina is then stripped from the back of the piece, when it is ready to be placed in position. If the platina is left, it detracts from the translucency, and makes a dark line at the union. You will understand the necessity of using very thin platina.

* * * There are a few general rules to be observed in bringing about the desired results in this system. The preparation of the cavity. In the main, it is after the fashion of one prepared for the reception of a gold filling — differing in this particular: a goodly portion of the cavity is filled with quick-setting cement, and that portion well undercut. It would be impracticable to try to burnish the platina into the full depth of the average cavity, where this system would be applicable; neither would it be safe, or in good judgment, to try to burnish the metal in, without a good and solid foundation in all parts to rest the metal against. That portion of the cavity remaining unfilled should have something of a flare, or outward bevel, leaving the edges square, or nearly, at right angles with the surface of the tooth, so that when the metal is burnished over the edges, the angle thus formed acts as a brace to stiffen the matrix, and prevent its changing shape while handling, or being baked, so that the piece, when placed in the cavity, will be slightly wedging in shape, and make a close joint when forced to place. The cement previously placed in the cavity having served its purpose, is removed, and fresh cement put in, in order that the pins, loops, or other means of mechanical attachment, may be properly imbedded in the cement. If the piece is for a labial, or buccal cavity, or in any location where but little or no force is exerted against it, no pins, or loops need be attached, or soldered to the metal matrix, but may be lifted carefully from the cavity, and

placed in the body and baked. While in others it may be necessary to take an impression with matrix in position, in order to get at the proper amount of contour to be restored, from this impression a model is produced the exact counterpart of the mouth, with the matrix in the cavity. To solder on the pins, or loops, place the platina matrix on a mixture of plaster and white sand; when sufficiently hard pierce the metal through into the investment, and place the pins, or loop, wherever desirable; solder, then drop into a little water, and the investing material will crumble away easily.

The modifications of this work are practically limitless, and the field it offers is inviting to skillful and artistic hands.

PROCEEDINGS OF SOCIETIES.

FIRST DISTRICT DENTAL SOCIETY OF THE STATE OF NEW YORK. NINETEENTH ANNIVERSARY.

NEW YORK CITY, JANUARY 16, 17 AND 18, 1888.

Dr. W. W. Walker, the president, called the meeting to order, and asked the Rev. Brady E. Backus, D. D., to open the session with prayer. After which, the president read his address of welcome, which was enthusiastically received. Dr. Louis Jack of Philadelphia, responded to the address of welcome on behalf of the visitors present. In his response, he took occasion to allude to the resolution of the American Medical Association and the Dental Section of the International Medical Congress as two great events, having occurred during the year 1887. The speaker took a hopeful view of the ultimate effect of the action of the American Medical Association in admitting dentists to membership in that body. The numerical strength of the section in dental and oral surgery of the congress appeared to the speaker to augur well for the cementing of the medical and dental practitioners for future congresses. Dr. McKellops then gave notice that the clinic committee would attend to the wants of operators as far as possible. Mr. J. K. Beach of New Haven, then ad-

dressed the meeting on patents and patent litigation. After giving a history of the tooth-crown and bridge-work litigation up to the present time, he said that the profession ought to discourage the taking out of patents by members of the profession, in the interest of humanity, as well as a desire to cultivate a true professional spirit. Dr. W. H. Dwinelle then took the floor and said, as far back as 1856 he published an article in the *American Journal of Dental Science*, describing a tooth-crown band and ferule. This article was illustrated by wood-cuts engraved by himself. (Dr. L. D. Shepard, of Boston, Mass., being detained by illness in his family, did not read his paper entitled "Prominence of Discussion Upon One Tooth to be Deprecated.") Dr. C. F. W. Bödecker then read a report of the microscopical examination of an implanted tooth which had been extracted six months after implantation. The conclusions of Drs. Bödecker and Heitzmann are that: First, there is no revivification of the dentine, cementum or pericementum; second, the tooth is held in place by reason of the proliferation of granulation tissue into bay-like excavations in the cementum; third, union is mechanical; fourth, the probabilities are that implantation is more likely to prove stable than re- or transplantation." Dr. Heitzmann then spoke on the subject of the examination of the above-mentioned tooth, and stated that the original pericementum had disappeared entirely. The excavations in the dentine resembled those seen in deciduous teeth at the time of their shedding. He said that implantation, in spite of the absence of revivification of the peridental membrane, and the evident destruction of the cementum, and dentine by proliferation of granulation and connective tissue, might become one of the operations of the future in dental surgery. Dr. G. L. Curtis then read a paper on the same subject. He reported that in one case an implanted root now partially supported a bridge piece. This is the first reported case of the utilization of an implanted root for the support of a bridge. Dr. G. V. Black then discussed the specimens presented by Dr. Curtis, he having examined them under the microscope. Dr. Black discussed the probability of *new* cementum being deposited over the root of the implanted tooth, and stated that if it could be assured, the operation would prove successful. Dr. Atkinson

then spoke in commendation of the work of the meeting during the evening in devoting the time to the discussion of a purely scientific subject. Adjourned.

SECOND DAY, JANUARY 17, AFTERNOON SESSION.

President Walker in the chair.

Dr. Black read a paper entitled, "An examination of the physical forces of nature with reference to the germ theory of the decompositions and disease." Notice was made of some of the difficulties in the way of the general acceptance of the germ theory and of the criticisms of the work of micologists. Also of the fact that the discussion of the physical forces correlated to the germ theory, had not as yet received much attention, and that dentists, in order to get the benefit of ascertained facts of etiology, must familiarize themselves with the subject. Most persons make up their minds as to the reasonableness of any phenomena that may have been observed, by a comparison of these with the nature of the forces supposed to be active in the production of similar phenomena. This is done by most persons, perhaps, without a very clear conception of the physical forces that may be operative in producing results, but it is in these that we find the basis of fact in arriving at the reasonableness or unreasonableness of any phenomena claimed to have been observed. These forces should, therefore, be classified and studied, individually and collectively.

Attention was called to the continuous changes of composition and decomposition taking place in the sixty-nine elements of which the planet is composed. The changes of the seasons, of meteorological variations, of vegetation and of animal life, and their effects upon the general appearance of the landscape, and that all of these were dominated by certain physical forces, each of which had especial powers in the production of these phenomena. These were classified in four groups, as follows:

- 1st. *Attributives*; chemical affinity, gravity or weight.
- 2nd. *Auxiliaries*; light, heat, electricity.
- 3rd. *Aggressives*; life.
- 4th. *Directives*; mind, creator.

Attributives. Chemical affinity and gravitation were regarded as essential attributes of matter, the forces belonging to matter,

and without which there is no matter. Gravitation is an aggregating force which has brought the materials of the planet together, which holds them together, and holds the planet in its orbit. Its action is to bring things together that have been put asunder by other forces. The stone that has fallen and found a lodgment, will remain lodged forever if not disturbed by other forces. Gravitation can not change its position.

Chemical affinity deals with atoms and molecules, uniting these into other molecules for the formation of compounds, or decomposing compounds for the formation of other compounds. But this power acts only when materials have been brought together. Contact is a necessity, and chemical affinity has no power to bring about this contact. This must be done by other forces before chemical affinity can act. Compounds once formed by chemical affinity, remain permanent forever if not disturbed by other forces or if new elements be not added. The crystal once formed will remain a crystal forever if not disturbed by other forces. An unstable compound, so-called, is one that is easily disrupted or decomposed by the addition of other elements or by some of the disturbing forces, as light, heat or life.

The second group, heat, light and electricity—*Auxiliaries*, are, in a large sense, disturbing forces, but seem to act especially as aids to other forces. Heat influences chemical affinity in a very wonderful manner, aiding the formation of compounds in one case and causing decomposition of compounds in others. It also acts as a disturber of gravitation and causes motion by its effects upon the physical condition of certain forms of matter, as in the conversion of water into steam or vapor, in which condition it rises into the atmosphere to again be precipitated as rain, etc.

The effect of light on chemical affinity may be seen in the photographer's plates and a multitude of other instances. Both of these are also essential to life. The processes of life are confined within certain temperature limits and certain of the phenomena of life, as the formation of the chlorophyl of the plant, are not produced without the aid of life.

As to electricity little is yet known of its influence in modifying the phenomena of nature.

Aggressives. Life considered in itself is a mysterious power operating upon matter. It becomes tangible to our senses only

through the forms that it builds. It manifests itself in matter by the use of four physiological processes, viz., First, the power to form a solvent or digestive agent that will prepare food-material for absorption and assimilation. Second, the power of the assimilation of the food-material thus prepared or the power of tissue building; nutrition. Third, the excretive power, or the power of shedding out material once used in tissue building in the form of waste products, urea, etc. Fourth, the reproductive power, or of unlimited self propagation.

These four propositions express the essentials of the phenomena of life in all organized beings, from microbes to man. While the unaided action of chemical affinities, if undisturbed by other forces, brings eternal stability, the processes of life are constantly in action, and its chemical processes are never complete until the cessation of life. Even then it has left, the means of continuing them in future generations. If at rest apparently for a time as in the form of the egg, the seed, or the more mature plant in winter, it breaks into fresh activity under fitting excitation by the auxiliary forces.

The rose spreads its beautiful colors to the sunbeam, throws its perfume on the air, and withers away, but leaves the seed from which spring new generations.

Unlike other forces of nature, life inaugurates the chemical changes which it induces. It is ever aggressive in seeking out and bringing together the material upon which it acts. The grass sprang from the gray earth, air and water, in accordance with the powers exercised by a germ wafted to the spot by a favorable wind. The antelope found its food in the grass, and the grass was changed into other chemical forms. The lion found its food in the flesh of the antelope. Finally the lion dies. The carcass that lies in the jungle is a group of combinations of elements, that are as powerless to inaugurate chemical changes as the sands of Sahara. But the same atmospheric currents that planted the grass seed, now transport microbes to the lion's carcass. These have their powers of digestion, assimilation, denutrition and reproduction. They grow and the chemical elements of the lion are disrupted until the bleached bones only, show where the carcass once lay. In this we have the theory of decomposition by germs, in its completeness and simplicity. It is the simple work

of life repeated from form to form, the one destroying that which had been built by the other, world without end.

Mind is the director of life and serves to control environment and take advantage of surroundings for the aid of and perpetuation of life.

The paper further presented the relations of the germ theory to the theories which have stood opposed to it, and closed with an appeal to the dental profession to make a close study of the subject and its practical bearing on their daily work.

The discussion was opened by Dr. W. X. Sudduth of Philadelphia.

Dr. C. T. Stockwell followed.

The essayist had covered such a wide field that neither of the gentlemen felt compelled to differ from the conclusions presented in the paper.

Dr. Latimer asked Dr. Sudduth if he understood him aright when he said that hermetically sealing a canal previously desiccating it, would prevent all future trouble?

Dr. Sudduth replied that he referred to teeth where he destroyed the pulp himself, which had been treated antiseptically and the root desiccated by a heated wire or the hot-air syringe.

Dr. Atkinson spoke of the importance of the paper of Dr. Black and illustrated his feeling on the matter, by saying that he was not like the mother, who on the approach to maturity of her daughter, felt jealous of her womanhood and possible superiority in mental attainments; but he was willing to pay tribute to superior learning and research, and felt rejoiced at the grand exhibition that had been presented to the society by the author of the paper and the gentleman who had followed him.

Dr. Pierce spoke briefly in commendation of the essay.

Dr. E. L. VanSant said that the microbe of decomposition was less tenacious of life than almost any other micro-organism.

Dr. Black closed the discussion.

CHICAGO DENTAL SOCIETY.

The regular monthly meeting of the Chicago Dental Society was held at Apollo Hall, Chicago, on Tuesday evening, Decem-

ber 13th, 1887. After the transaction of the usual business, Dr. E. D. Swain read a paper on "Artificial Vela and Obturators." This paper will be found on page 57 of this number of the REVIEW.

The following is an abstract of Dr. Black's remarks on "Palato-plasty:"

"After what has been presented to you in the able paper of Dr. Swain this evening, not much will be expected of palato-plasty. I have seen cases in which parts of the lips, teeth or tongue have been lost, and yet speech and enunciation not materially interfered with; but I have never seen a case where the injury extended to the soft palate or the muscles of the same, without destroying distinct speech. Whenever the attachment of the muscles of the soft palate is disturbed or injured, impediment in speech arises, and without surgical or mechanical appliances, some have achieved fairly distinct utterance by closing the nostrils, but always with a nasal twang.

[By means of blackboard illustrations, the speaker described the anatomy of the soft palate and of the muscles controlling its movements.]

Frequent failures attend operations for the correction of cleft by means of palato-plasty, and many causes lead to uncertain results. The muscles, in cases of cleft palate, are not used in a natural manner, and the continued neglect to use them results in an atrophy of these muscles, and they become short. In an attempt to bring into juxtaposition, the borders of a cleft of the soft palate in its posterior portion, favorable results are more certain than when a cleft in the anterior portion is operated on. To secure the best results, operations for cleft palate should be performed in youth; wherever possible, in the baby before it has made efforts to use the muscles, before the brain has become accustomed to control the movements of these parts in a certain way; unless the child does early learn to use these muscles, it is difficult at a later period to teach it the proper control of them. A practice formerly very prevalent, which consisted in severing the muscles at each side of the fissure and then bringing the borders of the cleft in contact, has been almost wholly discarded, for it was found that the injury to the muscles was so great that the soft palate was of little or no use after the fissure was closed,

and that the cicatricial tissue caused it to be very stiff. The next step was the severing of the levator muscles, but this also proved to be based on erroneous theories. Normally, the soft palate is often from one-half to one inch longer than is necessary. The heads of the levator muscles, when severed, are never re-united, or are united too far to the sides of the palate, and hence the use of a muscle, most effective in closing the pharynx, was lost. The next step resorted to was the severing of the tensor palati muscle just inside the hamular process. This method was also very unsatisfactory, as the muscles thus severed are withdrawn and do not re-unite; and in the formation of the cicatrix, the palate becomes tense and drawn.

A closure of the soft palate may be made in most cases without much difficulty, provided the surgeon does not attempt to do too much at one time. I have generally noticed more successful results in those cases where none of the muscles were severed. Attempt at closure should be made before the patient is one year old; at any rate before the age of five. In many cases the surgeon is annoyed by the yielding of the soft part at those points where the stitches are made, but much of this annoyance may be avoided by the use of a stitch passed from side to side, supported by large glass beads, to prevent its cutting through the tissues. This will take off the strain of the muscles sufficiently to allow the line of suture to heal.

The parts are thus drawn together and brought into contact. I know of a number of cases which have been successfully closed in this manner. In a cleft palate extending entirely through the soft and hard palate, the soft palate is brought into contact in the manner just described. At another operation the bones of the hard palate are broken with a sharp chisel alongside of the teeth and the parts are moved toward one another until they touch. [The speaker then demonstrated the use of the automatic needles in palato-plasty.]

DISCUSSION.

DR. BROPHY: An essential feature of a good obturator is the securing of a correct impression and a perfect adaptation of the obturator. Hence, the trial plate should fit perfectly. This is also essential in making artificial vela, a perfect adaptation to all parts must be attained. No impingement should be permitted,

and the plate should fit perfectly and closely overlap the borders of the cleft on all sides. I highly recommend the use of both operation and mechanical appliance, for generally persons affected with cleft palate suffer from pharyngitis or chronic catarrh, and the cure of these diseases, even without improvement in speech, is a great gain. In the improvement of speech, very much depends on the aptitude and the efforts of the patient. The operation of staphyloraphy is one of the most difficult in the list of surgical operations, requiring much skill and patience. The fact that the operation should be performed early, can not be too urgently recommended, for the younger the patient the greater the chances of union. Speech has not yet caused the movements of the lips to deviate from their natural action, and because the unused muscles atrophy, and the cleft broadens as age advances.

DR. SALOMON cited a case of cleft palate, in which the borders of the soft palate were brought in apposition and so held by means of hooks, similar to the hooks used on ladies' chains. These were allowed to remain for three or four months, and eventually effected a union of the parts.

DR. C. S. CASE of Jackson, Mich., did not think the making and the introduction of artificial vela and obturators difficult. The impression of the cleft need not be taken high up into the nasal passages.

DR. GILMORE recommended the use of anæsthetics in all these operations. He permits the head to hang over the table so that the blood, which would otherwise accumulate in the fauces, will not interfere with the breathing. He adheres to the use of silk ligatures. He looks favorably on the late Prof. Langenbeck's (Berlin) operation of muco-periosteal-uranoplasty, which consists in making flaps of the mucous membrane and periosteum of the roof of the mouth, bringing them together and retaining in position by ligatures. These cases prove successful unless necrosis supervenes, a condition liable to occur.

DR. A. O. HUNT of Iowa City, Ia., described a peculiar case in which the soft palate was covered with transverse ridges, placed as near together as it was possible for them to be. These ridges seemed to involve only the mucous membrane and not the muscles of the soft palate. He referred to the difficulty of

learning to speak and of learning to use an appliance placed in a mouth in which a defect has existed for many years. It requires much patience and labor on the part of the patient to learn the new methods of articulation and of producing sounds.

DR. BLACK, in closing the discussion, stated that success in any of the operations for closing a cleft palate, is only approximate, and great improvement in speech is only secured in cases where the operation is performed in very young persons.

BANQUET.

On the evening of December 14th, 1887, the seventh annual dinner of the society was given at the Hotel Richelieu. Some eighty dentists were seated about the banquet table.

After a few introductory remarks by President Reid, the following toasts were proposed and responded to :

"The Chicago Dental Society"—Louis Ottogy.

"Our Guests"—G. H. McCausey, Janesville, Wis.

"Dentistry and its Relation to the State"—A. W. Harlan.

"The Country Dentist"—W. N. Morrison, St. Louis.

"Early Dentistry in Chicago"—W. W. Allport.

"Our First Clinic"—T. W. Brophy.

The following were guests of the society : Rev. H. G. Perry, Chicago ; Drs. W. T. Magill, Rock Island ; W. N. Morrison, St. Louis ; W. B. Knapp, S. B. Brown, Ft. Wayne ; A. O. Hunt, Iowa City ; W. H. Taggart, Freeport, Ill. ; C. S. Case, Jackson, Mich. ; J. B. Morrison, E. W. Anderson, Indianapolis ; W. H. Stevenson, Wabash, Ind. ; W. C. Wendell, R. G. Richter, Milwaukee ; Byron Douglas, Appleton, Wis. ; G. H. McCausey, Janesville, Wis. ; W. P. Richards, Englewood, Ill.

Next December the society will celebrate the twenty-fifth anniversary of its existence, and if the intention and desire of the members is any indication of what is to come, the twenty-fifth anniversary of the Chicago Dental society will eclipse anything of the kind which has ever occurred in the history of this society.

THE DENTAL REVIEW.

Devoted to the Advancement of Dental Science.

PUBLISHED MONTHLY.

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COPPER AMALGAM.

The operator of to-day, who is not familiar with all the methods and materials known to dentistry, is certainly laboring at a disadvantage. The present tendency of American dentistry is toward conservatism. We are learning to use more discrimination in the selection of filling materials, choosing those most suitable and serviceable for the case in hand, regardless of any previous prejudices which may have existed.

Copper amalgam is wholly different from other amalgams, in the fact that it contains nothing but pure copper, combined with mercury. This amalgam has been used in England for a great many years, but in this country it is almost unknown in its clinical aspect, and has not received the attention it merits.

It would seem at a glance that its use here had been confined more to experimental purposes, its general adoption as a filling material having been considerably neglected, and this, we think, quite unwisely. We have used copper amalgam quite extensively for several years (six or seven), and therefore can speak advisedly concerning the results obtained. These are sufficiently flattering to induce its continuance in the future, giving it the preference over other preparations bearing the stamp amalgam.

Our experience in the use of this material has been confined largely to the English preparation, known as "Sullivan's Cement." The shrinking propensity so common to the majority of amalgams now on the market, is almost unknown to the one

under consideration. This alone is a most commendable feature. As a preserver of the teeth which fall under the head of faulty structure, this material has no equal. To further substantiate the above assertion, we take the liberty of quoting Dr. W. D. Miller, who says: "The only filling at present in use which exerts a continual anti-ferment action upon the walls of the tooth, and its immediate surroundings, is the old copper amalgam. Not only that, but the very substance of the tooth containing such a filling, itself becomes antiseptic. * * * * Secondary decay in such a case would be next to impossible, where anything like cleanliness was observed. This result is well supported by observations which I have had abundant opportunity to make for the last five years, here where this material is so extensively used, and I do not hesitate to say that if our only object is to check the destruction of tissue by caries, there is no material at present in use with which this object may be so surely accomplished as with a good copper amalgam." Space forbids our commenting at this time upon the various theories regarding the manner in which this material preserves tooth structure; suffice it to say that chemists who may be considered as authorities, assert that this preservative property is the sulphide of copper, formed by the action of the saliva upon the metal, which has the power of preserving by its antiseptic virtues. Other observers claim that the copper salts which are formed, act purely in a mechanical manner, by plugging or sealing hermetically the dentinal tubuli, thus preventing the possibility of destructive agents penetrating, and acting upon the tooth in a locality protected by such a filling. The latter theory we regard as being quite plausible, and we do not wish to lose sight of the fact that the former is not valueless.

Objections have been raised against the use of copper amalgam, because it discolours the tooth. This is not universally true, as cases are seen where this material has been in use for five years, the teeth to all external appearances appearing as clear and perfect as the day they were filled. Again, other teeth have become discoloured, but not to a degree to make them unsightly.

In those cases where discoloration had taken place, it was remembered that the amalgam, when mixed, was "dirty," *i. e.*, there was a decided soiling of the hand or mortar in mixing; whereas, in the other cases, the amalgam left the hand unsoiled.

We are not prepared to state positively that the salts of copper are self-limiting in their penetration of dentine, but if this should be the case, we would not expect to find any discoloration of the tooth.

We have lately been using some copper amalgam manufactured in Chicago, which for plasticity and general working qualities, is preferable to the English preparation; and the objectionable feature of uncleanness seems to be entirely overcome by a new process in its manufacture. We therefore can safely predict that if the manufacturer uses care in its preparation, selecting his materials with a view of having them chemically pure, a copper amalgam can be obtained which will yield uniformly good results. And we need not fear that the tooth structure will be marred by discoloration, provided proper precautions are observed in its introduction.

The mechanical texture of copper amalgam is exceedingly compact, and the property it possesses of receiving the most delicate markings, makes it possible to adapt it to the inequalities of the cavity with but slight pressure. It would be imprudent to place it in a cavity exposed to view, because the surface of the filling turns black, and therefore would be unsightly. Where amalgam is to be used for filling temporary teeth, nothing better can be found than copper amalgam.

It is safe to predict that amalgams will not yet be dispensed with; this being true, when we are compelled to use an amalgam, let it be the very best.

THE ILLINOIS STATE DENTAL SOCIETY MEETING.

The importance of the meeting of the Illinois State Dental Society, which will be held at Cairo, on May 8th, 1888, should not be underestimated by the dentists of the entire state in general, or by those of the southern portion in particular. It should also be of much importance to the profession in Missouri, Arkansas, Tennessee, Kentucky, and Indiana. There are several reasons why the meeting will be held at Cairo this year, and these should not be forgotten by those interested and those most likely to be benefitted. The society has now held twenty-three meetings but none of them have been held south of a line drawn

east and west at the state capitol. South of Springfield about fifty miles, a line drawn east and west would pass through Alton, and below this line the society's membership is less than ten. Nevertheless thirty thrifty and well populated counties are situated below this line. These counties (being nearly one-third the number in the entire state) have a population (1880) of 570,000, while the entire state (1880) had but 3,070,000, hence the ratio of representation from this section—ten dentists in a population of over half a million—is exceedingly meager, and should be largely augmented at this meeting.

Then again, the meeting of 1889 will be the twenty-fifth anniversary meeting of the society, one which should be made the most successful of any yet held; the arrangements for holding it will be made at Cairo. A large representation should be present from all parts of the state, the north and middle should encourage the south, and the latter should prove its interest by a large representation.

The executive committee would do well to make suitable arrangements for the holding of clinics, a matter which should not be neglected; the members might be divided into classes to prevent the overcrowding at the chairs of the operators, and a sufficient number and variety of operations should be performed to make it interesting for any who may attend. Make your arrangements to attend the meeting at Cairo, be there Tuesday morning at roll call, and don't rush off before the final adjournment on Friday.

CURES FOR TOOTHACHE.

It is unworthy the intelligence of medical journalism to persist in publishing positive "cures for toothache." Not a month passes, but some new drug or prescription, universally applicable to toothache, is naively endorsed by one or another prominent periodical. This only serves to reveal the lamentable ignorance of the general practitioner in the first principles of dental pathology. Odontalgia in its protean forms, is so constant a cause of human suffering that no physician can be counted equipped, until he is able to recognize it, or differentiate it from other lesions.

A multitude of morbid conditions in the teeth and the tissues immediately surrounding them may give rise to pain, and it follows that the remedies must be as numerous as are the conditions which require treatment. Let this unscientific "doctoring" cease.

"FIAT JUSTITIA."

In a recent number of the REVIEW, we called the attention of our contemporaries to the injustice of publishing clippings, without crediting them to their proper source; and, at the same time, mentioned the fact that the *British Journal of Dental Science* had published three clippings from the REVIEW, as editorial matter of its own. In recent numbers of the *Ohio State Journal*, our friend Bethel has made use of those same clippings, and given credit for them to the *British Journal*. If our friend would read the REVIEW a little more closely, he need not be three months behind the times in circulating useful knowledge, or lay himself open to criticism for negligence. We deem this subject—the giving of proper credit to exchanges—of much importance, as injustice is often done by the ruthless confiscation of the fruits of the labor of others.

ANTIPIRYNE.

Recent medical journals have contained notices of this drug which indicate its advantageous employment in dentistry.

Antipyrine is an oxygenated alkaloid introduced by Dr. Knorr of Munich, who prepared it synthetically from the constituents of coal tar. It is in the form of a white crystalline powder almost odorless and tasteless, and is freely soluble in water and alcohol. When first introduced it was used for its antipyretic effect, but more recently it has been displaced by antifebrin for this purpose. It is now employed chiefly for the relief of pain in all morbid conditions where morphine was formerly used. See reports extraordinary success with it in relieving the pain of acute articular rheumatism, chronic gout, angina pectoris, lumbago and hepatic

colic; in facial neuralgia he and others have found it peculiarly efficient. Dr. John B. White writes in the *Medical Record* that it affords grateful relief from severe headache, and that it possesses reliable prophylactic virtues against recurrent attacks of cranial neuralgia. It is given in doses of from 10 to 30 grains dissolved in water or wine. Hypodermically $7\frac{1}{2}$ grains dissolved in distilled water. Its administration is not followed by unpleasant after-effects. Antipyrine deserves to be added to the dental pharmacopoea.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

To the Editor of the Dental Review :

DEAR SIR.—In compliance with your request I send you a few thoughts on the signs of the times. That rapid strides have been made in all branches of the mechanico-scientific professions in the last decade every observing person must admit. While photography threatens to revolutionize the "graphic arts," the chemist to analyze an atom, the metallurgist to crucible the world, the microscopist is adjusting his glass to see their results.

All these and a score of other arts and sciences have been pressed into the services of the modern scientific dentist. Thus giving him great breadth of research and corresponding returns. Viewing it from a New York standpoint, it is probable that no branch of industry contains so great a proportion of eager, zealous, enthusiasts as is found in the dental profession; as evidence of this, what profession or science has held meetings where so many of its members cross the continent, leaving business at so great a sacrifice as many of our profession have done within a year. At the ninth international medical congress, the dental section contributed more than any other, both in numbers and finances, and why not complete the honest record by adding brains. During this time two national dental associations have held successful meetings. "The American System of Dentistry," while not comprising everything its critics might desire, is the largest attempt thus far in the publication of dental literature. All these important events have thoroughly awakened the pro-

fession. At present there is scarcely a state or territory without its thoroughly organized dental society. This interchange of thought, creating a dental literature, has a sanitary and stimulating effect.

That the First District Dental Society whose nineteenth anniversary occurred during the 16th, 17th and 18th of January, has given its full share in elevating the standard of dentistry, all readers of the proceedings of its meetings and clinics will agree. This meeting was full of enthusiasm and probably the largest dental meeting held within a year. It is said the American dentist gains his eminence by superior manipulative skill, while our European brethren are pre-eminent in theoretical lore. The abstruse and less common subjects discussed on this occasion indicated a growing theoretical tendency in America more than usual. Meetings of this character will do much to lessen our deficiency. With the exception of Dr. Farrar's paper treating of the "philosophy of correcting irregularities of the teeth," every essayist presented the microscopic and histological side of the question, so that the remarks made by Professor Truman seemed quite apropos.

He said, "They have original ways in New York, if a man has insufficient time or conveniences to do mechanical work he takes an impression, sends it to a laboratory, and the expert returns him a beautiful piece of workmanship without much regard to adaptability, dividing the fees. The same system seems to be in vogue with regard to microscopic work. A dentist wishing a subject illustrated, furnishes the topic to the microscopist who works up the case, producing beautiful results. There is a division of the spoils, honors are easy, and everyone seems happy."

That there are some good reasons for this view of the case would appear from the report made of the tooth extracted from the mouth of Dr. Younger, the microscopist expressed great surprise that the root presented a growth where micro-organisms were abundant.

Judging from the previous history of this case as given at the time the tooth was extracted and published in the *Cosmos* of December, 1887, the wonder is that anyone should expect other than unhealthy tissues; where three teeth had been planted in one socket, the two first transplanted, the last implanted, when by local stimulants and irritants, keeping up for two years and seven

months an attempt to produce healthy union between the pericementum—as Dr. Younger says—and the tissue lining of the socket, and in this case each tooth inserted remaining a shorter time than its predecessor. I have no desire to disparage implantation or detract from any success it may have attained, but why intelligent dentists will, through these sickly cases, attempt to prove the success of some great operation or method is past finding out. What we want in all these cases are facts, honest, stubborn facts, magnify them as much as need be, but not the imagination in reporting them. When this method is pursued it will give us a literature having more of the nature of law and less of the vivacity of medicine and our progress will be permanent.

Very truly yours,

New York.

DENTOS.

THE CHICAGO DENTAL SOCIETY.

To the Editor of the Dental Review :

DEAR SIR—Since the meeting of our state society at Lake Maxinkuckee last summer, Dr. Anderson and I have been promising ourselves that at the first opportunity we would make a visit to Chicago and extend our acquaintance with the eleven clever gentlemen who came from Chicago and did so much to make our meeting a success last year. The time came at last, and in the shape of a formal invitation from the Chicago Dental society to attend its annual meeting on the 13th of December, and a dinner at the Hotel Richelieu on the following evening. We reached Chicago Tuesday morning. We made a few calls during the day, and attended the regular monthly meeting of the Chicago Dental Society at night. Here we found a large number of all kinds of dentists. The subject for the evening, “Artificial Vela and Palato-plasty,” might be thought the least likely of any to draw a large number of dentists, but it was presented in such a masterly manner that even the cross-roads dentist could gather information of value to himself and his patients. The anatomy, physiology and pathology of the parts composing the palate were brought out so clearly that every one could obtain some new points. The whole process of correction of defects of

the palate was explained, from taking the impression to the completed case, and the instruction of the patient how to use it. The most remarkable thing during the evening to the visitors, was the peaceable solution of several knotty questions and different opinions which came up for discussion. Each speaker seemed to have views of his own, which he was not slow to state, yet he left the impression that he came there to learn, and even if not convinced, was ready to yield to the majority. It was nearly midnight when the society adjourned.

The next morning at 9 o'clock an all-day clinic commenced at the Chicago College of Dental Surgery. When we reached the place, we feared there was more to see than we could find time to thoroughly see. It would be folly to attempt to describe it. Everything was good. Everybody was happy. Even the patients were pleased. Every chair was occupied, and we hastened from one to the other lest we should miss something. The visitors were extended especial attention. Dr. Black, who has charge of the infirmary, and who is a whole dental college in himself, took us from one place to another, and made us feel like students again. When he left us to take some one else around, Dr. Brophy took us under his wing. We saw all, and felt when the day was over, that much valuable information had been absorbed for future use. The college is splendidly equipped for good, honest instruction in all the departments, and with such equipment and such a faculty, if a student does not get what he paid for he had better change his vocation. Many of the older colleges could take some valuable lessons here.

There is another class of schools which seems to be a new enemy to dentistry. It is the so-called "Dental Infirmary," of which the city of Chicago has several. These infirmaries are incorporated under the laws of the state just as any dental college, and can receive patients and perform all dental operations without danger of arrest. They are simply *cloaks* behind which incompetent operators can practice dentistry, delude the people and obtain their money. They can not make dentists. Their dental students are not students at all, in the proper sense of the term. In several cases those who compose their faculties have had their offices closed by the strong arm of the law, but that same arm is not long enough to reach under the cloak of "Dental Infirmary."

This evil, which promises to be a stumbling block, is the *pons asinorum* for future legislation, and we hope some one will soon solve the difficulty and show us a way to suppress the iniquitous institutions.

At the annual dinner of the society, which took place at the Hotel Richelieu in the evening after the clinic, an opportunity was given to see the Chicago dentists in their good clothes, with office cares and responsibilities laid aside. It was not a meeting merely for fun and feasting, though there was no lack of either, but besides these essentials of a successful banquet, there was much food for thought in some of the speeches, and we hope the reporters caught every word, so that the readers of the *REVIEW*, who were not present, may get some of the spirit of this pleasant occasion. This ended the programme as far as we had been advised in our invitations. The visitors had been treated so well that at the end all they could do was to propose three cheers for the Chicago Dental society, and they were given. We can not all live in Chicago, and perhaps we could not all succeed there if we did, but of this much, we are satisfied that they have a jolly lot of good fellows there, who are hard at work in their society and hard at work in their offices. "May they live long and prosper."

J. B. MORRISON,
Indianapolis.

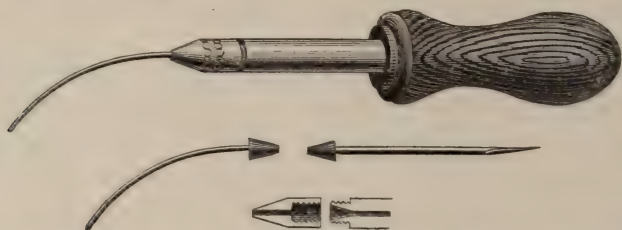
A MEDICINAL SYRINGE.

To the Editor of the Dental Review:

DEAR SIR—No one will deny the value of free interchange of thought, in theory or practice, by means of our dental societies and literature at home and abroad. Attendance on a society meeting, a clinic, a friendly visit to a brother dentist, or perusal of the dental journals always brings to our notice some new device or a simple practical hint that will help us to overcome and make easy or possible an operation heretofore difficult and troublesome.

In view of the above remarks, the writer desires to call attention to the Dunn medicinal syringe (as improved), which seems not only to facilitate, but to be essential in the successful treatment of some of the most common diseases of the mouth.

It is easily kept in order, always ready for use, is light, strong, durable, capable of great force and delicate manipulation. The



cut gives the correct form of the needles as they are furnished for use. The needle can be adjusted as quickly as a canal broach in the holder. The rubber cone or packing can be removed at pleasure, leaving the needle entirely free for cleaning. The mounted needle is all that will be necessary to replace, and as there is no soldering, the expense and annoyance saved will be apparent to all. While we do not underestimate the value of surgical procedure in the successful treatment of calcic inflammation, phagedenic pericementitis, the removal of serumal calculus, etc., we find the use of certain drugs to be a very valuable adjunct in combating disease. The former methods of introducing medicaments beneath the gingivæ, by a few shreds of cotton on a broach, while it was an improvement upon the camel's hair brush, formerly used to paint over the surface only, is clumsy and ineffectual in comparison with this instrument, which so readily carries a drop, or any amount required, to the seat of the disease, even though it may be at the apex of the root of a second or third molar; the remedy is then easily and thoroughly brought into contact *with all the diseased parts*. ASBESTOS.

FOREIGN CORRESPONDENCE.

LETTER FROM RUSSIA.

To the Editor of the Dental Review :

DEAR SIR—Supplementary to my last letter*, a few words on the influence of women in dentistry in Russia, may be of interest

*DENTAL REVIEW, vol. I, p. 755.

to the readers of the REVIEW. The position women have gained in this country is ample proof of their ability and fitness to practice our profession. Formerly all the doors of the institutions of learning were closed to them, but now, since this is not the case any longer, they have freely entered the colleges. Those whose future careers have remained under our observation have all succeeded, either as assistants in the establishments of others, or in offices of their own, usually located in some of the provinces. I know personally a number, who have been in my employ, and who will eventually become very good operators: Thus, for instance, Mme. Pavlinova, who is married, has two children, and is located in St. Petersburg; Mme. Honkewitch is married to an accoucheur, and is located at Odessa; Mlle. Raboutovsky, a young lady, is practicing in St. Petersburg, and assists at the Dental Clinics; Mlle. Gomolecki, whose future is bright with promises, has just established herself with her mother at Vilna; of Mlle. Dievska, who is now engaged with me, I can frankly say that she will become one of the best of dentists; Mlle. Anlokolsky, a niece of the famous sculptor, has been in practice for over three years. She is one of the members of a clinical corps of operators.

All these ladies have finished their dental education in the school conducted by M. Wazynsky. I speak here only of ladies whom I know personally quite well. There are many others who have either finished their education or who are about to do so, and others who have just begun.

My next letter will be confined to a discussion on the dental societies of Russia.

Very respectfully,

HELENA VONGL DE SOYDERSKY, D. D. S.

ST. PETERSBURG, Russia.

PULP DEVITALIZATION WITH WOOD POINTS.

To the Editor of the Dental Review:

DEAR SIR—In response to your solicitation in the December number of the DENTAL REVIEW, of experience *in re* the use of wood points for destroying and removing the dental pulp, I would say that I have had some experience in the use of

THE DENTAL REVIEW.

wood points for said purpose, and am led to believe the practice is only adapted to the six superior anterior teeth and the corresponding inferior teeth, where the point can be applied in a direct line with the pulp canal. Having had considerable experience in bridge work, I have found this method of pulp extirpation quite satisfactory under the circumstances already mentioned, where it may be used almost or quite painlessly; but it is a painful operation in proportion to the inadaptability of the wood-point to the pulp canal.

A valuable adjunct to the wood point, which should be so tapered with file and sand-paper as to render certain of its reaching entirely to the end of the pulp canal, has been suggested by my colleague, Dr. Croll. It is a V shaped groove extending along the entire length of the point. This admits of the exit of the pulp during its destruction.

It is very rare in the ordinary process of caries that the surrounding circumstances are favorable to the use of the wood point; in fact I have never used it, except in cases of excision, but I am sure in those cases it is quite a success.

I think you were a little unfortunate in your selection of cases, for I can readily understand that the difficulties encountered contributed in no small degree to the results spoken of. I would suggest the use of the wood point only in cases of excision, treating all other cases with the medicinal devitalizers that the requirements may suggest.

Yours truly,

London, England, Jan. 21, 1888.

W. MITCHELL.

REVIEWS AND ABSTRACTS.

ON THE PHYSIOLOGICAL ACTION OF COCAINE ON THE LOWER ANIMALS AND MAN, AND ITS USE IN DENTAL SURGERY. By George Cunningham, B. A., (Cantab.) D. M. D., (Harv.) L. D. S. (England.) London: Harrison & Sons, St. Martin's Lane; 1887.

This is a reprint from the transactions of the Odontological Society of Great Britain, before which the paper was read by Dr. Cunningham, in May, 1887. It relates a number of experiments performed on frogs, dogs, and man; the conclusions, in the main,

approximate those of Biggs, Mays, and Von Anrep, which were based on similar experiments, and reported at the time in various medical publications.

IRREGULARITIES OF THE TEETH AND THEIR TREATMENT.—

By Eugene S. Talbot, M. D., D. D. S., Professor of Dental Surgery in the Woman's Medical College; Lecturer on Dental Pathology and Surgery in Rush Medical College, Chicago. With 152 illustrations. Philadelphia, P. Blackiston Son & Co., 1888.

The preface states that "this treatise is intended to embrace all that is necessary to a clear and practical understanding of the etiology and treatment of dental irregularities." A not over-exacting scrutiny of this handsome volume, will yield the greatest measure of satisfaction in the chapters of Part II which are devoted to treatment. The author has here detailed the method and described apparatus used by himself in different classes of cases, and given the essentials of systems of regulating as used by Drs. Patrick, Farrar, Byrnes and Coffin. Dr. Angles' system might have been added with profit to the reader, for although its originality is disputed there is no question as to its value. These chapters treat of the philosophy of orthodontia and fairly represent the resources of mechanism in regulating teeth so far as known at the present day. The different methods are presented without comment upon them, the author evidently taking it for granted, that a large minded eclecticism will enable the dentist to make use of that method, or combination of methods, which will be most efficient in a given case. This part of the book contains very little matter which is not familiar to the reader of dental literature, but it is here collected in a convenient form. The beginner will feel the lack of the "practicableness" of the work; it would be greatly enhanced if the author had described some of the devices, and the manner of making and applying them, in greater detail. The obstinate piano wire for instance, is bent to its various forms with great ease when a few simple rules are known, and what a task this usually is to the uninitiated.

Under the caption "Anatomy," the tissues involved in dental irregularities, and their relations are described. The different varieties, and their etiology are also discussed under this head. This

portion is excellent as far as it goes, but it is to be regretted that the anatomical description is not carried out to a more special consideration of the tissues. The peridental membrane for example, the most important structure involved in the movements of the teeth in correcting irregularities, is wholly ignored. This omission is scarcely excusable in the face of recent recorded investigation of the nature of this structure. It cannot be considered legitimate book-making to appropriate the cuts of other original writers without giving due credit. In regard to much of the text it is but charitable to suppose that our author has been subject to "unconscious cerebration."

The author's style is somewhat labored, often involved, and occasionally ungrammatical. The Latin (pages 22 and 23) will be considered quite characteristic of the "wild west." Such defects are largely attributable to imperfect proof-reading; apart from this however, the book is typographically faultless. It makes a handsome volume and as a whole gives the impression that no expense has been spared in its production.

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TO THE EDITOR OF THE DENTAL REVIEW:

Dear Sir:—In reply to W. E. M. in the December number of the REVIEW, permit me to state, that mercurial poisoning or inflammation but rarely results from the wearing of artificial dentures. In the case in which he cites, a gold plate while perhaps not entirely remedying the inflammation present, will in a great measure alleviate it. In some mouths the mucous membrane is so delicately constituted, that the irritation of a foreign substance constantly present, causes a hypersensitive condition, which is not entirely absent no matter what the nature of the material may be. In my practice I have seen several such cases entirely cured by inserting gold instead of rubber; I remember a few cases of considerable improvement, and one very marked case in which the substitution of metal, the utmost cleanliness of person and denture proved of no avail.

Respectfully,

Chicago, Feb. 1st, 1888.

D. D. S.

TO THE EDITOR OF THE DENTAL REVIEW:

Dear Sir:—In reply to the query of W. E. M., D. D. S., in December number of the DENTAL REVIEW would say, if the plate his patient is now wearing is of red or brownish red vulcanite, he will find that by remaking the case, using black vul-

canite for the base, he will in all probability overcome the irritation and congestion spoken of. Or if he would more surely overcome the trouble, I would suggest aluminium as a base, vulcanizing the teeth to the metal with black vulcanite. The plate in this case must be about one-half thicker than would be necessary for a gold plate.

If an upper denture, do not have any air chamber, as this may be the cause of hypertrophy of the mucous follicles of the palate, and the throat irritation a concomitant, incidental to contiguity.

There may be some constitutional peculiarity that even a gold plate—as spoken of—may not remedy, for the worst congested palate I ever saw was under a gold plate. However the foregoing suggestions may be worthy of consideration, as I know them to possess merit.

Yours truly,

London, England.

W. MITCHELL, D. D. S.

Cincinnati, Jany. 24, '88.

Please answer in your journal, What is *Taggart's Tin*, also where can it be obtained? It was mentioned in your last review as useful for matrices, and oblige.

A PRACTITIONER.

Dr. Edgar D. Swain furnishes the following information:

The tin is not called "Taggart's" but *Taggers*, because it is largely used for making tags.

It is made of the best and softest iron, and is used in one end of oyster and other cans which are to be opened with a knife. It is the thinnest tinned iron manufactured, also the toughest. It can be obtained from Norton Bros., Chicago; ask for sizes 36 and 38.

TO THE EDITOR OF THE DENTAL REVIEW:

Dear Sir—In reply to N. D. E., in the January number of the DENTAL REVIEW, I would say: Inject with gentle force, two ounces of tepid water through the opening made by the extracted root, having a towel or large napkin held to the nose to catch the discharge; follow with injections of the solution of peroxide of hydrogen and bichloride of mercury (one gr. of bichloride of mercury to two oz. of peroxide of hydrogen) until there is no effervescence. This should be continued daily until the pus has entirely disappeared.

The opening made by the root should be kept closed during the intervals of treatment by a pellet of cotton, so that no foreign matter will pass through. As the parts get well the opening will close of itself.

If "N. D. E." is so situated that the peroxide of hydrogen can not be had immediately, he will obtain very excellent results by using an aqueous solution of permanganate of potassium (seven grs. of permanganate of potassium to one oz. of tepid water) injecting until the discharge appears clear on the napkin, and continuing as above.

These solutions should be made fresh each day of using.

If there is another diseased tooth connected with the cause of the trouble, it must be treated during the same sitting.

E. C. TIMERMAN, D. D. S.

Oakland, Cal.

MEMORANDA.

Dr. John B. Rich has located in Washington City.

Dr. A. W. Harlan sailed for Europe January 18th per steamer Adriatic.

Dr. H. C. Meriam of Salem, was elected the president of the Massachusetts State Dental Society.

Dr. C. T. Stockwell has written a work on "Immortality," which has just issued from the press.

The meeting in New York, while not as well attended as that of 1887, was a successful and profitable one.

Attention is called to Drs. Bogue and Davenport's change of location from 39 to 73 Boulevard Haussmann, Paris.

The Michigan State Dental Society holds its next meeting at Ann Arbor, March 27th. Make your appointments accordingly.

At the opening meeting of the nineteenth anniversary of the First District Dental Society, there were about 500 persons present.

Drs. T. W. Brophy and A. W. Harlan were elected honorary members of the Odontographic Society of Chicago at the January meeting.

At the meeting in New York, Prof. J. Foster Flagg of Philadelphia, gave the students in the N. Y. College of Dentistry an enthusiastic talk on the use of plastics.

Dr. Geo. O. Howard of Waukegan, Ill., writes that he finds arsenious acid combined with cocaine, a great improvement on the old mixture for destroying pulps.

The work now being done in the various dental societies in Chicago is becoming more valuable and interesting from month to month. Our pages will show the results during the year.

Myrtal, aseptol, terpinol, terpin-hydrate, boro-glyceride, iodol, tereben and other medicaments of more recent introduction, were exhibited at the Chicago Dental Society clinic in December.

Dr. E. M. S. Fernandez of Chicago, has invented a dental plugger to be used with the dental engine. He claims that in this new instrument all objectionable features of engine pluggers are eliminated.

Dr. Geo. E. Carpenter, formerly of Chicago, but more recently of Helena, Montana, is in New York City under medical treatment. Mrs. Carpenter, who has been in Europe for some time has recently returned.

At the First District Dental Society's informal dinner last month the Chianti-biamo and Rosso with the Perrier-Jouet unloosened the tongues of the after dinner orators, and wit and good humor was free and plentiful.

It is none too soon for the chairmen and secretaries of the various sections of the American Dental Association to be at work and spare no time and means to make the meeting at Louisville, in August next, a successful one. The officers should endeavor to secure contributions from each member of every section.

The committee on clinics of the Chicago Dental Society is contemplating and arranging for a clinic and meeting to be held in Chicago, either in December, 1888, or January, 1889, celebrating the twenty-fifth anniversary of the society.

Dr. Dudley has completed the preparation of the matter for the transactions of the section in Dental and Oral surgery of the Ninth International Medical Congress. It will make 500 printed pages, and will be illustrated by 100 cuts.

Dr. Harlan writes that he considers the clinic of the First District Dental Society an eminently successful affair. About 400 or 500 dentists passed in and out of the N. Y. College of Dentistry during the morning of January 17th.

Dr. Walker, in his address of welcome at New York, expressed the hope that at no distant day in the future there would be convened a World's congress of Dentists for dentists, and the upholding of the honor and dignity of the dental profession.

A private letter from Hofrath Robert Telschow of Berlin, who is dentist to the Crown Prince, gives assurance that his mouth and teeth are entirely free from disease, and are not a factor in the cause of the malady from which the Prince has been suffering.

Dr. H. J. McKellops acted as supervisor of the clinic of the First District Society at the recent meeting in New York. His stentorian tones were heard above the hum of the conversing dentists and the click of the electro-magnetic mallets — everybody had to move on.

The amount of space given to a description of the clinic of the Chicago Dental Society, held in December, prevented the publication of a report of the December meeting and of the banquet in the January issue of the REVIEW. The same will be found in this number.

Dr. Sudduth says that desiccation of a root canal and the hermetical sealing of the same is good practice, and better practice than to use bichloride, or other disinfectant, all of which is scientific nonsense. Desiccation is not destruction, and hermetical sealing of a canal is seldom accomplished.

The Illinois State Dental Society meets at Cairo, May 8th. It should be the duty of all members to interest themselves in making this one of the largest and most successful gatherings the society ever witnessed. Get your ideas together and let us hear from you the second Tuesday in May.

Resorcin is a granular whitish salt, soluble in all proportions in water. It is not poisonous in doses of gr. lx or under. It is more potent as a microbe killer than carbolic acid or thymol. It will whiten the mucous membrane, but will not char it as chromic acid will. A 10% solution in water will disinfect instruments.

The annual election of officers of the "Chicago Dental Club" occurred at the Tremont House, January 23, and resulted as follows: President, A. B. Freeman; Vice-President, J. Austin Dunn; Secretary, C. Stoddard Smith; Treasurer, E. M. S. Fernandez; Business Committee, I. A. Freeman, C. P. Pruyn and W. G. Stowell.

Dr. Talbot is engaged in the preparation of a new book on the subject of "The etiology and classification of Dental irregularities. The author is making extensive examinations into the condition of the teeth and jaws of the idiotic, deaf and dumb, and blind, with a view of tracing the relations of irregular teeth to these defects.

We regret to notice the death of Dr. W. F. Phillips, superintendent of the State Institute for the Blind, at Jacksonville, Ill., January 17, 1888. Many who attended the last meeting of the Illinois State Dental Society will have pleasant recollections of the visit to the Institution and the genial character of the worthy superintendent.

The S. S. White dental manufacturing Co., of Philadelphia, had an exhibition of some specialties, as the Kirk implanting apparatus, the Crown dies and centers, the Knapp blow pipe, engines, electric and pedal, and clamps of various shapes, in the room adjoining the stage of the masonic temple. None of the other dealers made exhibits in such near proximity to the meeting.

Drs. C. P. Pruyn and J. A. Dunn are using cocaine in extraction and in the opening of abscesses, etc., etc., and are keeping a record of all operations and the results, which we hope to have the pleasure of publishing at a later date. We wish more of our professional brethren would take up some line of study of the like character, and add their valuable contribution to our literature.

SOUTHERN ILLINOIS DENTAL SOCIETY.—The second annual meeting of this society will be held in Centralia, on Tuesday and Wednesday, April 10 and 11, 1888. The executive committee have about completed a programme which no Southern Illinois dentist can afford to miss, also a cordial invitation is extended to the dental profession in general.—G. W. ENTSMINGER, *Secretary*, Carbondale, Ill.

A dental society, under the name of Sociedad Dental de Colombia, was organized at Bogota, Colombia, on February 28, 1887. This is the first organization of its kind in Colombia, and its meetings are held semi-monthly. The following are the officers of the society: G. Vargas Paredes, D. D. S., president; Eduardo Gaviria, D. D. S., vice-president; Dr. Rafael Tamayo, secretary; Aljandro Salcedo, D. D. S., asst. secretary; Nicolas Rocha, D. D. S., treasurer.

Several of our readers have asked us to republish the following:

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	Peroxide hydrogen	-	-	-	-	-	f 3 ij
M.							

To be used as a disinfectant cleanser for pyorrhœa pockets. This formula must be kept cool and in a dark place or in a dark bottle. This is a destroyer of microbes and their spores.

Dr. G. L. Curtis of Syracuse, N. Y., retains implanted teeth in position and immovable, in the following manner: He takes a piece of platinum wire and makes a staple by bending the ends at right angles with the bar (—), cavities are then drilled in the implanted and the adjoining tooth. This staple is cemented in position with oxyphosphate of zinc. It is ground and fitted not to interfere with the occlusion, and is allowed to remain for six months or more.

When Mr. Beach made the statement that patents ought to have no place in a profession that cared for the health of the individual, the First District Dental Society applauded very heartily. We are opposed to a patent which involves the taking out of a license in order to render it available for personal use. We have no objection to inventors taking out a patent to protect a salable article of merchandise which is to be used by the dentist, but we are opposed to royalties, and all secret compounds and formulæ.

We have recently stood by the chairs of some operators who make it a custom to be seated while at work. We wonder why more do not resort to this means

of preserving their physical integrity and warding off the various diseases, such as consumption, dentist's leg, etc., to which dentists are said to succumb. The wear and tear upon the physical and nervous systems, invariably resulting from the attempt to reach difficult positions while standing, might, to some extent, be obviated.

TO THE EDITOR OF THE DENTAL REVIEW :

Dear Sir—Members of the American Dental Association, as well as others interested in the progress of the dental profession, are cordially requested to furnish contributions pertaining to dental education, literature and nomenclature, either in the form of papers or suggestion, and such contributions should be in the hands of the officers of Section II on or before June 30, 1888. Respectfully,

LOUIS OTTOFY, *Secretary*.

W. H. ATKINSON, *Chairman*.

It was inadvertently omitted from the report of the Chicago Dental Society Clinic in the January issue to say that Dr. E. E. Cady of Chicago, made a gold filling demonstrating the use of a new engine mallet. One of its most noticeable features was its size, the length being less than three inches. Hence it is not unwieldy when attached to the hand-piece. The stroke is almost exactly like that of the electric mallet, with the advantage of being almost instantly changed with a small thumbscrew. The blow, however, can be made much stronger than with the electric or Bonwill.

Dr. Sudduth is opposed to what he is pleased to term the "hangers on" of workers in bacteriology. He is opposed to theorists and theories, and the introducer of remedial agents by non-workers in the field of microscopy. If it were not for the theorists, and the empirical use of remedial agents, by doctors and dentists many original workers would be at a loss to turn their energies in the proper direction. They go hand in hand. All discoveries are not made by scientists, they are simply proven or confirmed. There are no aristocracies in science, the humblest worker, who never saw a microscope, may have a logical mind, and place the technical Scientist on the right track.

Implanted teeth are liable to various vicissitudes, and their loss may be due to the most unlooked-for circumstances. Here is an instance of this kind from a friend, in his own language: "In regards to the operation you performed so skillfully and successfully of implantation of my tooth I am sorry to say I have knocked it out last Saturday morning. I had one of those attacks of epilepsy which I have been subject to for over two years. When I became conscious I found I had hurt my face badly and had lost the tooth which grieved me most. I have had several of these attacks before, but this time I unfortunately fell right on my face."

The following is quoted from a recent letter from Dr. S. J. Barber, of Portland, Oregon: "If it's a matter of any moment I can tell you, or anybody else, where Dr. C. M. Richmond got his ideas of the way to make gold crowns. While he was in practice in San Francisco I called on him, and he handed me while in his operating-room, a crown for a bicuspid. Knowing that Dr. Beers, of the same city, claimed to hold a patent upon gold crowns, I made the inquiry if he would not cause him trouble, whereupon Richmond fished out an old "Cosmos" and showed me an article accurately describing the mode of making crowns of gold as he, Richmond, practiced it; the date of the article he claimed was far back of the date of the Beers patent. Richmond showed me how he worked his

gold and suggested that it was worth my while to try the same, remarking that there was absolutely no chance for any one to claim a patent, as the article mentioned was a bar to any application therefor, and acting upon his suggestion I did make and adjust two crowns, which are being worn now."

We are assured that the rooms selected for the joint meeting of the Southern and the American Dental Associations, in Louisville next August, are commodious and well arranged for the purpose. The meeting of these two well known bodies in joint session will be looked forward to by many of the best men of the profession with great interest. We hope that every dentist who can spare the money will *take* the time necessary to stay in Louisville the entire week, and help, by his presence and participation, this notable event in the era of gatherings of dentists. The date of the joint meeting is August 28, 1888. Louisville is accessible from all points of the United States.

The second annual meeting of the Southern Illinois Dental Society will be held at Centralia, Ill., on Tuesday, April 10, 1888. Dr. J. J. Jennelle of DuQuoin, is president and Dr. G. W. Entsminger of Carbondale, secretary. The executive committee for the ensuing meeting consists of Dr. C. B. Rohland, Alton (chairman); Dr. A. D. Finch, Anna; and Dr. T. W. Prichett, Whitehall. This society embraces the field within whose borders the next annual meeting of the Illinois State Dental Society will be held for the first time in its history. All dentists residing in the southern portion of the state should contribute to the success of the meeting at Centralia on April 10, and send an overwhelming delegation to Cairo on May 8 next.

At the clinic of the Chicago Dental Society, in December last, the stereopticon exhibition of microscopical specimens by Drs. Black and Davis entertained the meeting nearly two hours. Among the large number of slides shown were a number of Dr. Black's studies of the periosteum and periodontal membrane; and by Dr. Davis, histological slides of the various tissues of the body, including injected specimens of stomach, intestines, tongue, lungs, kidney and liver; also normal and pathological specimens of the glands, secondary cancer of the parotid gland, sarcoma of sub maxillary gland, together with a number of tooth sections, showing the enamel, dentine and cementum in sound and carious teeth, exostosis, secondary dentine, and a series of fetal jaw sections, illustrating tooth development. Dr. McIntosh also exhibited a number of slides of interest, among which was a section of the inferior maxillary of a mole, showing all the teeth *in situ*.

Philadelphia is so near a neighbor of New York that it is not surprising that many of the best known dentists of that city were in attendance at the anniversary of the First District Society. Dr. Louis Jack among others we had not seen for a dozen years. Jas. Truman, C. N. Pierce, W. G. A. Bonwill, E. C. Kirk, E. T. Darby, A. G. Bennett, W. X. Sudduth, H. C. Register, S. H. Guilford and others were among the number. Chicago was represented by Drs. J. N. Crouse, E. S. Talbot, W. J. Martin, T. W. Brophy, A. W. Harlan, G. V. Black, Louis Ottofy and Frank H. Gardiner. St. Louis, Cincinnati, Buffalo, Boston, Washington, Baltimore and the far East and South were each represented by one or more dentists. Dr. D. Genese of Baltimore exhibited a new crown which is furnished with a platinum backing baked into the crown and fastened equi-distant from the cutting and gum edges of the tooth. The advantage of this in soldering to ferrule and dowel is apparent.

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ORIGINAL COMMUNICATIONS.

DENTAL ELECTRICS.

By C. EDMUND KELLS, JR., D.D.S., NEW ORLEANS, LA.

The subject of electricity is to-day occupying the minds of thousands. Its wonderful advances within the past ten years having, assuredly, no equal in any of the other sciences or arts. Turn in almost any direction we will, we are met by this subtle agent rendering some service to man. To note its progress we have but to recall the Philadelphia Centennial Exhibition of 1876, when there was neither telephone, electric light nor electric motor—speaking from a practical and commercial point of view—and compare it with the present, when there are hundreds of electric stations supplying myriads of lamps and countless motors.

To the dentist “time is money,” and so it is that all means of shortening any process, lessening the labor, or saving pain, are eagerly sought for and quickly adopted. For accomplishing these ends there can be no doubt that the electric current is the agent from which the best results are to be derived, and how this may be done is the subject of this paper.

Before going into details, we must admit that until comparatively recently the battery question was a great drawback to the general use of electricity in dental offices. Now, however, that electric light and power stations are being installed so rapidly it will not be long before the dentist, even in the smaller cities, will be supplied with a constant current at low cost and no trouble.

One of the greatest difficulties encountered by those commencing to "read up" upon this subject is caused by the great number of new and confusing terms used. It will be my endeavor to be as explicit as possible, and to adhere to old English, wherever practicable.

It must be borne in mind that the electric current may vary in force, as does any other power; and instruments that are designed for a current of a certain strength will not operate well, or at all, with one of a lesser; or will be destroyed by one too great. For example: An electric mallet designed to be operated by a battery of four cells will not run on a current derived from a single cell, and will soon be destroyed if connected directly to the electric light wires, carrying their powerful current.

Therefore, it becomes necessary to first learn the character of the current with which we are to be supplied, then the capacity or requirements of the instruments we are to use, when means for combining the two may be devised. Using the well-known Edison current, supplied from the "plant," one-fourth of a mile distant, the apparatus herein described is proportioned to its particular strength, and would, therefore, need slight modifications to be suited to any other.

The selection of a motor is naturally the first question. There being a great variety of these upon the market, no one can assert without having made comparative tests of them all which is the best. The main point to be considered is that of power; if that be sufficient the details of arrangements of the various parts, and general style of the motor are immaterial. But it is necessary that under all circumstances there be plenty of motive force, and that the cutting instrument or the grinding wheel is capable of performing its work, otherwise the apparatus is nothing more than a toy, which may be said of some I have seen. The one I use, and which is perfectly satisfactory in every respect, is a handsome little one of one-eighth horse-power, made by the "C. & C." Company, of New York. For over a year it has done its work with no attention, save daily oiling.

This motor, or in fact any other, not being well adapted to run the movable S. S. W. engine, a "suspension" was tried, but from its inherent faults proved unsatisfactory.

Therefore, a new form was devised, containing all the advan-

tages of the suspension, with none of its disadvantages. Figure 1 shows the engine, which consists of the S. S. W. pulley-head and arm, mounted on a light swinging bracket.

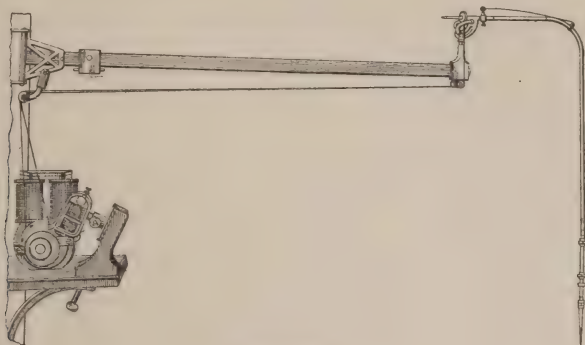


Figure 1.

This being pivoted to the wall in front of the chair, allows the pulley-head to swing horizontally into any position desired, and at once gives the most perfect freedom to, and command of the hand-piece. The pulley-head by means of a groove in its supporting-rod, and a screw in its socket, is allowed to make but a half horizontal revolution, that the driving-band be not interfered with.

Below the swinging arm, the motor is placed, supported on a little shelf, and connected to the engine by an ordinary band, as shown.

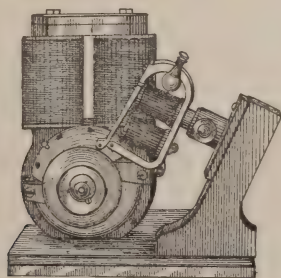


Figure 2.

The little apparatus, shown partly to the right and in front of the motor, is the *brake*, which is the important feature of this installation, as by it the engine may be stopped at once. In fig-

ure 2 it is shown a little larger, by which it is seen to consist of a "clutch" operated by an electro-magnet, a simple and exceedingly effective device.

When the electric current goes to the motor the engine band slips freely through this clutch, but when the current is changed to the magnet of the brake, the band is *gripped*, stopped instantly, while the momentum of the motor may continue to revolve the wheel for several seconds.

This completes our engine; now for its control, for if we want perfection, we must be able to start and stop it instantly *while in any position* at the chair. Figure 3 shows the apparatus devised for this purpose, to be operated and moved by the foot.

Being connected by flexible wires, it allows the operator to take any position on either side of the chair, and with the greatest ease have the most absolute control of his cutting instrument.

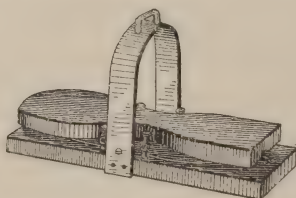


Figure 3.

When in position as shown, the rocking foot-piece is held horizontally by springs, and the motor does not run. Placing the foot upon the pedal and pressing upon the heel brings two electric terminals together, and the engine runs as long as it is held there. Pressure on the toe, changes the current to another set of contacts, thereby diverting it from the motor to the electro-magnetic brake, stopping the bur instantly, as before shown. An automatic lock was at first used to hold the pedal in either position, but not being an advantage, has been taken off. Thus it is seen that by the rocking of the foot, the engine is started or stopped at will, and may be governed by either foot, and in any position.

Having disposed of the questions of starting and stopping the engine, we now turn naturally to that of grading its speed, for that is also a necessity. Right here it will be well to dwell a little upon certain characteristics of the electric current, that we

may understand the apparatus needed for this purpose. By "*conductivity*" we refer to that inherent property of all matter by which the passage of electricity is effected. By "*resistance*" is meant that inherent property possessed also by all substances whereby the passage of the current is opposed. Both of these properties are found in all substances, varying in degree only.

If our motor were connected directly to the Edison wires, a certain speed, far in excess of what we need, would be attained. But if we intercept this current and make it do more work before it reaches the motor, which may be done by passing it through a body of a certain *resistance*, we naturally slow up its speed, and by varying this resistance, we correspondingly vary the speed of the engine. This is readily accomplished by a switch connecting several coils of wire, each of which adds to the resistance, and so

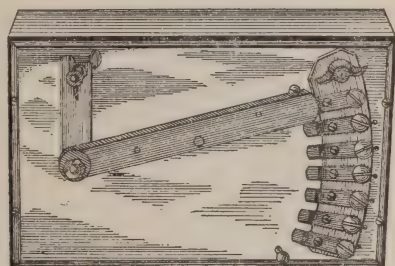


Figure 4.

a graded set of speeds is obtained. The coils being placed in a box and the switch arranged upon the cover, as shown in figure 4, constitutes an apparatus called a "shunt" which should be placed, if possible, upon the wall within easy reach of the operator while standing at the chair. The speed is varied by swinging the lever up or down. This is furnished with the motor by its makers.

To refer again to the properties of this most wonderful current, I will cite the ordinary incandescent lamp as an example of the fact that when a given current passes through a body of a certain resistance, the latter becomes heated. Here the carbon filament becomes white hot by that process. We may take advantage of this phenomenon in the following manner: A small pressure blower, driven by the motor, is made to force a jet of air

through a rubber tube carried on the engine bracket, and down the cable sheath. Just before reaching the hand-piece it ends in a little glass tube in which is a fine coil of platinum wire, wound upon an asbestos core. From this it is continued again to the end of the hand-piece, where it terminates in a little nozzle. Through the wire within the glass tube is passed the current that drives the motor, and it is so proportioned as to length and thickness as to become heated thereby. The air passing over it becomes warm, so when forced in a gentle blast into the cavity being prepared,



Figure 5.

it keeps it painlessly free from chips. By means of a loose pulley the blower is run or stopped at will, and when not in use a switch cuts out the current from the platinum coil.

Were we to connect our electric mallet directly to the Edison wire, being constructed for a much lighter current, it would soon be destroyed, as before stated. If we connect it to the shunt already described, the current can be made sufficiently weak to do it no harm, but at the same time there are certain objections to the use of it in this manner. An explanation of this fact would occupy much time and lead us into *deep water* of electrical science, so it will probably be wiser to merely show a better

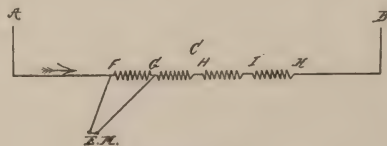


Figure 6.

method of reducing the current for that purpose, without remarks. The following diagram (figure 5) shows how the coils of wire are connected in the shunt with which to govern the speed of the motor, in which the current flows from A through the coils (C) to the motor at M, and on to B, the motor being in the direct track of the current. The lever is arranged to "cut out," that is, throw out of the circuit more or less of these coils,

whereby the variation of speed is accomplished. Now, the mallet must be connected in the following manner, as shown in figure 6, from which method a very different result is obtained:

One wire from the mallet (*E. M.*) is connected directly to the main line, at *F*. If then we connect the other wire to the coils, at *G*, it will be seen that the current can branch at *F*, a portion going directly through the coil (*F G*), and another portion flowing through the mallet, operating it at a certain speed and force of blow. Changing the wire from *G* to *H*, *I* or *K* alters the relative proportion of the coils, and at each point a particular character of blow is given by the mallet. Knowing the law that governs the case, it is possible to make this apparatus up in the same style as the shunt for the motor, and by the simple moving

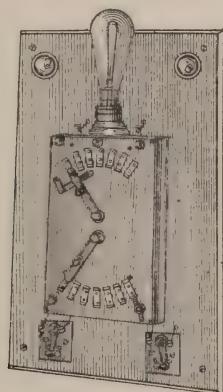


Figure 7.

of the lever, grade the blow within any necessary limit. By these two shunts, any of the electrical instruments furnished us, such as the mouth lamp, cautery, etc., may be operated by the Edison current.

Instead of using two separate ones, as described, each with its coils connected in the manner indicated, it is possible to use one set of resistances (coils) only, connecting them in the two methods needed, each of which acts independently of the other. Such an one as I am now using is shown in figure 7. The upper switch governs the mallet, the lower one the motor.

It happens that an ordinary electric lamp presents as much "resistance" as a great many feet of wire that can be safely used

with this current. Taking advantage of that fact, one is used for the purpose (taking the place of a certain number of coils), as shown in the above cut.

By leading the wires from these terminals, to a switch-board, shown in figure 8, placed upon the wall over the engine (as shown in figure 9), any and all the various instruments may be then readily connected, or disconnected. To each set of binding posts its special current is brought, and the switches, as shown, allow the currents to be turned on or off at will.

The special arrangement of different offices not being the same, the positions of the apparatus must be altered to suit in-

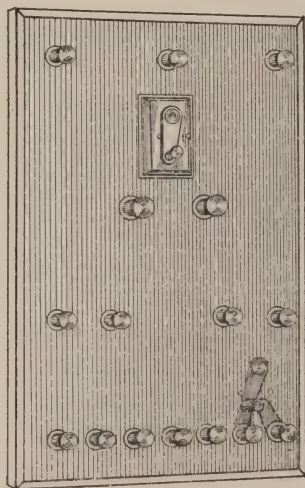


Figure 8.

dividual cases, but the general plan will hold good. Figure 9 shows the system as in use in my own office, as well as a cut can do. Upon the cabinet are seen the electric mallet and mouth lamp, also a small electric lamp mounted upon a movable stand, and placed within a reflector. Here is also placed the foot-piece which governs the motor and brake, properly connected by its flexible wires, it being put here for the occasion, for were it down upon the floor in its usual position, it would be out of the range of vision. All these are connected to the switchboard, as are also the motor and brake. But the mallet and the two lamps never being connected except when in use, and the three never

at the same time, the superfluity of wires here presented, is for this occasion only.

During the summer (six or seven months in this climate) another motor of same make drives a fan, and as a matter of interest, to slow it down to the proper speed a lamp is used as a resistance, instead of wires. This is immersed in a little jar of water, which it keeps at just the right degree of warmth for use in the syringe. Thus the same agent that is used to keep our

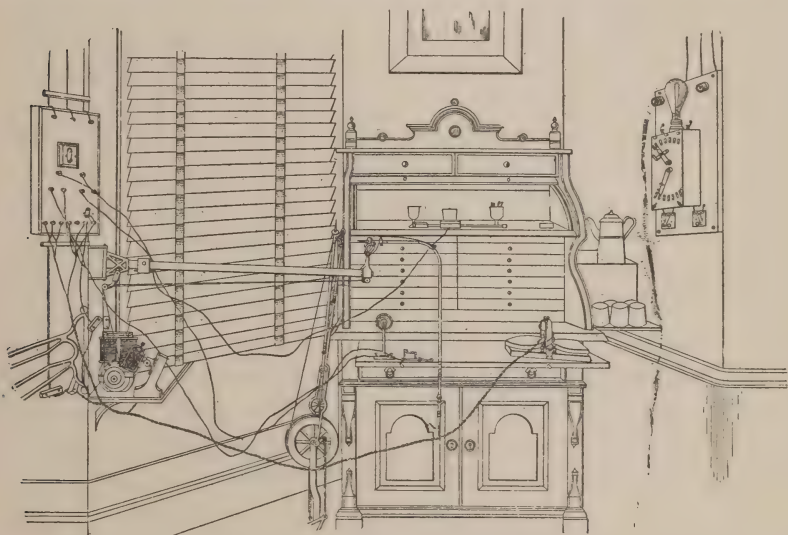


Figure 9.

office cool and our patients and ourselves comfortable, is also employed to heat the water for their use and so adds to their comfort in that way. This motor and lamp are connected by flexible wires, each to one of the sockets shown on either side of the lamp in Figure 7, and are governed by the two little switches shown below the shunt box.

It will then be seen that from the two insignificant little wires that enter our office is derived, heat and cold, light and power, and a world of pleasure and comfort and profit. Could we ask for more from one source?

Here where it will occasion no confusion let me say that by comparing electrical measurements to those of hydraulics, a very good idea of them may be readily obtained. In the latter the

pressure is given in pounds, the quantity in gallons, and friction is always taken into account in rating the discharging capacity of a pipe of a certain length and diameter. So in electricity—the pressure is recorded in “volts,” the quantity in “amperes,” and the friction or resistance in “ohms.” Therefore when we read of a current of so many volts we know its “tension” or pressure is referred to; when amperes appear, quantity is spoken of; and ohms refer always to the resistance encountered. The current dealt with in this article is of about 110 volts. Resistance “in series” (referring to the method of connection of coils as shown in Figure 5) 100 ohms. Resistance of five coils of German silver insulated wire No. 18, “in shunt” (technical name of method shown in Figure 6) with upper switch of (Figure 7) shunt, 40 ohms. Resistance of lamp there shown, 108 ohms.

From the drawings and above data, any practical electrician can duplicate any apparatus herein described and is free to do so, for, while this system is original with me, and is the first instance of which I can learn that a current from a central electric light and power station has been utilized for running a dental mallet, etc., no parts are or will be patented; the pleasure I am deriving from their use myself, and from seeing them in general use, which I expect to see within the next few years, amply repays me for the many, very many hours spent in their devising.

CARIES AND NECROSIS OF THE MAXILLARY BONES.*

TRUMAN W. BROPHY, M. D., D. D. S.

Caries and necrosis of the maxillary bones are of frequent occurrence and are chiefly due to dental lesions. The exciting causes, however, may be confined to crowded third molars, salivary calculus, traumatism, heavy malleting in filling the teeth of young patients, rapid wedging of teeth to secure separation for filling, careless application of arsenious acid in devitalizing pulps, injudicious application of force in regulating teeth by which inflammation of the pericementum is established, and other agents capable of producing otitis or periostitis; but of all the causes of these diseases of the maxillary bones, pulpless teeth

* Read before the Chicago Dental Society, February, 1888.

with unfilled or imperfectly filled roots are the most frequent. From such teeth and roots, indeed, originate more diseases of the maxillary bones than all other causes. In making this statement I am not unmindful of the destruction of bone following the eruptive fevers and that in strumous, syphilitic, and scorbutic patients and those poisoned by the action of mercury, lead, phosphorus, etc.

The history of maxillary caries when of dental origin begins usually with alveolar abscess after the acute stage of the latter disease has subsided.

Caries of bone is a molecular destruction of the tissue. Molecule by molecule the bone disintegrates, the organic matter first succumbing to the inflammatory process, suppurates, leaving the inorganic substance or earthy salts to gradually dissolve or break down into minute granules which find their way through the fistulæ, which are usually present, to the surface.

Caries of bone is analagous to ulceration in the soft parts, while necrosis of bone is the counterpart of gangrene or mortification of the soft parts.

Caries begins on the surface of bone and progresses slowly, extending deeper and deeper unless it is arrested either by vital force or surgical procedure. On the surface of carious bone pus accumulates, which, together with granules of bony substance finds exit through fistulous openings.

When necrosis occurs, the inflammation preceding, quickly overwhelms the circulation in the part; this is followed by stasis, all the cardinal signs of inflammation are present; suppuration takes place; the pus makes its exit through fistulous openings or about the necks of the teeth, the latter being hidden from view, oftentimes, by the excessively swollen gums. The bone becomes honey-combed throughout the entire circumscribed mass. Vital force resists its progress and forms a line of demarcation between the living and the dead tissue, and the sequestrum, eventually, is separated and cast off. The same degree of irritation exerted in different patients may be followed by different results; *e. g.* if an irritation of the periosteum be established in a strong, vigorous patient, free from specific taints, it might result in caries of the underlying bone; but necrosis with the exfoliation of a sequestrum is not likely to occur. On the other hand, the same degree of

irritation, exerted in cases of anæmic, strumous, syphilitic, or debilitated patients from any cause might terminate in necrosis and the loss of a large portion or even the whole of the bone affected.

Diagnosis is to be made of these diseases by means of the probe. A sharp steel probe is preferable. When this is brought in contact with carious bone its point will easily enter the cavities therein and the surgeon finds, moreover, the bone rough and denuded of periosteum.

Often carious bone is, in part, covered with exuberant granulations which makes the passage of a blunt probe through them difficult, therefore the operator may be deceived, in case his blunt probe does not find denuded bone, and pronounce the part free from caries, but with the sharp probe which passes easily through the tissues a correct diagnosis can be made. If necrosis be present the sequestrum should be left until nature separates it from the living bone, when it can be removed after making an incision sufficiently large for the purpose.

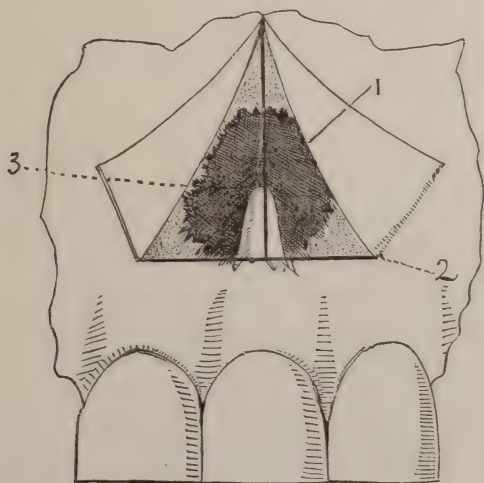
The treatment of these diseases should be preventive. Acute inflammation of the periosteum should receive prompt and vigorous treatment. If the disease arises from a tooth having a dead pulp the tooth should be opened and the septic gases removed and the canal treated antiseptically, if from worthless roots, extract them. Free and numerous incisions down and through the periosteum should be made. The general condition of the patient should not be neglected. If the inflammation can not be controlled, and several teeth which had previously been sound and firm are found to be extremely loose and nearly covered by the swollen gums, they will probably be lost, and their removal had better be accomplished at once, to secure more perfect drainage, as extensive necrosis may thereby be prevented.

Cases called chronic alveolar abscess are usually cases of caries of bone to a greater or less extent. A case of so-called chronic alveolar abscess which does not heal within a month in response to the usual treatment is not likely to heal from such treatment. Nature, however, sometimes removes such carious bone as forms about the apices of the roots of teeth, but when it does not the diseased bone should be removed by the use of instruments.

The beautiful oil paintings of the various phases of alvéolar

abscess and complications thereof I have the pleasure of exhibiting to you this evening are copied from the original work of Prof. Black, and are used in illustrating the subject to his college classes. The simplest case of osseous caries calling for surgical interference might be thus described: A superior central incisor tooth with chronic alveolar abscess at its apex which resists the usual treatment. Fistulous opening through the anterior alveolar plate and the gums just below the gingivo-labial groove. There is an ichorous discharge, and this fluid is one of the most conspicuous ocular signs of osseous caries. A small, blunt, flexible silver probe passed into the fistula and the osseous cavity, comes into contact with rough denuded softened bone; the apex of the tooth root is found extending upward from the floor of the cavity.

After first syringing out the osseous cavity if possible with a two per cent. solution of tepid carbolyzed water, a four per cent solution of hydrochlorate of cocaine should be carried into it and the superjacent soft parts by means of a hypodermic syringe, and allowed to remain from ten to fifteen minutes when local anæsthesia will usually be complete and the patient ready for the operation. I prefer to make an incision at first thus-



The cavity is then packed with iodoform gauze and the patient dismissed until the following day, when, after removing the gauze

and syringing the cavity I am enabled to see the interior, examine its walls, and observe the extent of the disease. With a long, slender cone shaped bur, the apex of the tooth root, should be cut off at the base of the carious bone cavity, after which a round, deep-cut bur should be carried into the cavity in contact with its walls and all the carious, softened bone rapidly cut away. The cavity should then be thoroughly cleansed, repacked with iodoform gauze, or its equivalent, and the patient dismissed until the following day, when the gauze should be removed, the pulp cavity in the tooth cleansed antiseptically, dried out and the canal filled with gutta-percha cones, which have been immersed in a solution of chloro-percha. In this way the canal may be accurately filled, the excess removed from the apical extremity of the tooth. Any sharp angular edges of the root which may have been left after the excision of its apex should be rounded off and made smooth. Crystal boracic acid is then placed in the cavity—the crystals dissolving slowly makes them preferable to a powder or solution, as their effect is not so transient—and either the antiseptic gauze or a plug of wax is placed in the bone cavity.

The plug should not be applied tightly to the wall of the cavity, as this would prevent the exudate from organizing into new tissue, thus defeating nature's effort to effect a cure. The cavity should be dressed daily, and its orifice kept open for drainage purposes until new tissue has filled it, when the plug will be no longer required. If wax be used, its surface in contact with the bone should be pared off a little from time to time so as to not interrupt the process of repair.

Since the introduction of sulphuric acid as a remedy for the treatment of carious bone, by Mr. George Pollock of St. Bartholomew's Hospital, London, it has been much lauded, and to the extent that it would suffice as a remedy for the cure of osseous caries. The aromatic acid is chiefly used, a thirteen-and-one-half-per-cent solution of the sulphuric acid of commerce, and its chief merit is, not as generally believed, that it dissolves the devitalized bone, but it stimulates the vital tissues beyond, and the advance of caries is thereby retarded. Carious bone may be removed by a gradual process of breaking down, but it is not removed by the action of the acid alone.

TUMORS OF THE MOUTH AND JAWS.*

A. E. BALDWIN, M. D., D.D. S.

As stated by the speaker a few months ago, he had labored under the delusion of being allowed to choose his own subject for his paper, and had chosen one, and worked upon it a long time. The subject assigned in this instance is one of which the writer has but little knowledge. But realizing that many come to the society to hear papers on the listed subject, and possibly loaded with much that is of interest in the discussion of the same, he determined to adhere to the adopted plan, and write on the subject assigned, hoping that at another time he may be allowed some choice. In advance he wants to state that this paper will consist largely of the thoughts of others, given as briefly as possible, and the original matter will be infinitesimally small, save in the latter part of the paper, where the writer has to strain a point to bring what he says under the head of "Tumors of the Mouth and Jaws."

The general term "Tumor" covers the ground of any swelling or abnormality in excess of normal size in any tissue. However, the term is generally used when the enlargement is accompanied by pathological conditions. The tumors of which we speak are in the hard or bony parts, and in the soft or fleshy tissues. We may with propriety divide them into two classes, those produced by local causes or conditions, and the other by outside or foreign influences.

The first class are of necessity benign in their character, and the second class may be either benign or malignant. In the proper diagnosis of these growths or developments it has long been a rule in surgery that the normal tissue must be understood; hence the necessity of every dentist being a careful and observant examiner in every mouth—not only of the tissue, the treatment of which calls the patient to him, but of all the tissues in the range of vision, so as to be able to recognize the normal condition. For if the examiner is ignorant of the normal he can not expect to understand the abnormal.

When the natural is clearly understood, then the diagnosis of the unhealthy parts is made easy by the process called exclusion,

*Read before the Chicago Dental Society, February, 1888.

and oftentimes a diagnosis may be arrived at in this way — that would be impossible in any other way. The writer does not wish to be understood as saying that all conditions are easy of diagnosis, for often it baffles the most skillful; and in this matter, as in all others pertaining to our specialty, those succeed best who use judgment and thought as to cause and effect, and he thinks the tendency of all is to examine to find proofs of substantiation of preconceived notions. The true scientist is the one who disarms himself of this, and examines with an eye only to the histological and pathological conditions; and as a rule, when the condition and the cause is understood the treatment suggests itself.

In the first division of tumors we may have exostosis — its name describes its nature; Sarcoma — this quite rare, and then the most common, cystic tumors of the jaws, many times produced by morbid enlargement or dilatation of the dental follicle. These occur in the alveolar ridge, and sometimes attain a great size. The contents are usually liquid, or gelatinous, and occasionally contain rudimentary teeth.

There is another growth, which is developed from the bony or the soft tissues, or from both, with the name Epulis. Virchow suggests that the nature of the growth be added to the term epulis, as epulis sarcomatosa, e. myxomatosa. The greater number belong to the sarcomas, and vary in their character all the way from the round cell sarcoma to the hard, firm fibro-sarcoma. This epulous growth may be from the osseous, or soft tissues, or more often having its origin from both. The growths are largely made up of giant cells, and usually occur in young subjects. The growth is varied — sometimes very rapid, and at other times very slow. They are very vascular, and this gives them a darkened color. As a rule, they are non-malignant, but the tendency is strong to a recurrence and spreading. When one determines to remove one of these growths care should be taken to remove all, and a rule among surgeons should be remembered, that is, cut away freely till you are positive nothing but healthy tissue remains; and in these cases usually a portion of the bone must be removed. The writer thinks that a fear of too much removal is at the bottom of many of the recurrences, and thinks that very few, if any, of them where everything is removed that pertains to the tumor.

Among the tumors in the soft parts are principally the angiomata — composed largely of vascular tissue — and are often called erectile tumors, and these vary in size at different times; another form, and more rare, are the lymphangiomata, the nature of which is indicated by the name.

Later in life we have *sarcoma* growths, and what has been said in regard to epulis applies largely to this. Carcinoma attacks (in the form of epithelioma) the soft tissues, beginning usually as a small nodule, or circumscribed hard, grayish infiltration of the mucous membrane. Then, we may have tumors as a result of the distension of glands from accumulated and retained secretions. The treatment of these is usually very simple, viz: to open the ducts and allow the contents to escape. Sometimes a lymphatic gland, by inflammatory dilation, gives rise to cystic tumors, known as cystic hygromata; and then various others in mucous structures in different parts of the mouth, known under the general term of Ranula.

We should be well assured that we understand fully the nature of the growth, or condition of the abnormal tissue, ere adopting any proceeding toward the eradication of it. The diagnosis can not be made too certain. Sometimes, the writer fears, if this is not remembered, grave mistakes may be made. Where the growth is causing but little disturbance, and developing slowly, or is stationary, the best treatment is to let it alone. Meddlesome surgery in these cases is often dangerous; provoking, oftentimes, a much more rapid recurrence.

In malignant cases, where the growth is of recent origin, or easily bounded, and the general condition of the patient is favorable (and here very much depends upon this general condition)—in such cases an operation should be urged, and the operator must remove freely. In case he makes any mistake, let it be on the side of removing too much rather than too little, for if any of the morbid growth remains it will act as a nidus for future growths, which are usually much more rapid than the original.

There remain many things to say in regard to the general subject—a much longer paper might profitably be written on only one class of tumors — but the writer has spent the time necessary to open quite a field for thought and discussion, and if any entertain different opinions than those expressed, the writer most cor-

dially invites them to express them, and hopes a more general knowledge of this subject may be the result.

Before closing this paper he wishes to mention a condition that, perhaps, properly belongs here, but hardly in the pure field of tumors, being, however, closely allied, viz: tumors resulting in a condition known as alveolar abscess. From the time the writer began to think on the subject of dentistry till now, this subject of abscesses, their causes and treatment, has had a special interest to him, and he thinks that he has never heard anyone speak of a case where, when one had treated, and then filled the roots of a tooth abscessed, if trouble recurred the idea was not conveyed that the recurrence was a result of imperfect work, and where our friends, who live among micro-organisms, would shake their heads and say, these canals were not made aseptic, or that some of the micro-organisms got away into pastures new, etc., etc. He was struck with the fact that all seem to agree that when the death and removal of the pulp was immediately followed by root-filling, that trouble seldom, if ever, occurred. But if the tooth pulp has been dead some time most dentists seem afraid to immediately fill, claiming they are unsuccessful in so doing—such cases giving trouble. Many claim this as a practical illustration that septic germs have been carried through the apical foramen, and its consequent ills are thus accounted for. You all know how enthusiastic these micro-organism enthusiasts can become, crying Eureka! in every gathering, and from their very assurance causing many to say, Amen! Now, the writer believes that in the main these claims are not true, and challenges them to proof. He has in a simple way experimented sufficiently to feel assured that in many cases, where the pulp has been dead some time there has been inflammation of the pericementum sufficient to produce an abscess, and that in very many of these cases there has resulted, from the pressure and infiltration of the purulent matter, necrosis of a portion of the alveolus, generally very circumscribed, sometimes quite extensive.

Now, it may be expected that where this is the case the dead bone will give trouble sooner or later, and usually very soon—when the opening through the tooth is stopped, however perfect the root filling may be; of course, if there is a fistulous opening the change will not be noticed. Now, he believes that when

these roots are cleaned out and dried thoroughly, and well filled, no trouble will occur from anything within the root or the tooth, but if care and thoroughness obtains we can tell by inflammations following the work that the trouble is outside of the tooth, and probably there is necrosed bone present. He can illustrate by two typical cases. Case 1: Patient had had a tooth filled, with a resulting abscess; three weeks later came to him; he found a fistulous tract; opened the tooth and carefully cleaned and dried the canals, and filled them and the tooth at the same sitting; four weeks later patient came again and said fistula had not closed yet; injected cocaine, cut down and removed a scale of necrosed bone; the wound healed kindly, and now, six months later, shows no sign but perfect health.

Case 2: Patient came with only roots of central and lateral left superior incisors remaining; they had abscessed twice; no fistulæ; wished to have them extracted, and, as is the writer's custom, he persuaded the patient to let him fill the roots first, and wait and see the results; patient reported forty-eight hours later with every sign of beginning abscess; he then extracted, and, as usual, found the roots perfectly filled, but on probing into the sockets dead bone was found, and, no doubt, caused the trouble. Here the roots spoken of had been filled forty-eight hours when extracted. Many similar cases might be cited, but this illustrates what is claimed: that, in his belief, in every case that can be dried thoroughly and perfectly filled, no trouble will arise from any condition within the tooth, and that in those cases where trouble arises it is from outside the tooth, and in many, or most cases, is caused by the necrosed bone; and the proper thing to do is to open down upon it and treat from the outside, and bur out the necrosed bone. Some members of our specialty seem inclined to make of this quite a surgical operation, but the writer thinks no professional duty is more simple. He injects about three or four minims of a ten-per-cent. solution of cocaine then makes an incision down to the part, and, with a fair-sized bur, cuts and then washes out the dead bone. This is all done with probably a mouthful of micro-organism, and usually one operation only is needed.

Authors quoted are: Billroth, Virchow, Holmes' System of Surgery, Coleman, Leber & Rottenstein, Magitot, Salter, Hutchinson, Ziegler, Handbook of Medical Sciences, etc., etc.

TREATMENT OF ROOTS, AND ARTIFICIAL CROWNS.*

BY DR. T. E. WEEKS, MINNEAPOLIS, MINN.

There seems to be quite a prevalent feeling in the profession, that if a man does not advance some new theory or method, that what he writes is hardly worthy of perusal. In deference to this opinion, I make my bow with an apology, because my *forte* is rather in gathering together the methods of others, than in original investigation or invention. Reversing the order of the program, I will speak first of the treatment of roots.

The tooth, or root, should be isolated in some way, to exclude moisture, preferably by the application of the rubber dam. This I am now able to adjust, even when the root is cut off level with the gum, by the aid of a new root clamp of my own design.

Free access to the canal should be obtained by enlarging the opening, but not the canal proper. Every particle of dead or disorganized pulp should be removed at the first sitting, and the canal thoroughly cleansed.

For this purpose I have found nothing superior to the fine Swiss broaches, the temper having been drawn until they are perfectly soft, and being wrapped with just a shred of absorbent cotton. These answer all the purposes of barbed broaches, enabling us to accomplish what is intended, in many attenuated canals, where a barbed broach could not be inserted. The annoyance of breaking is also avoided. I have occasionally broken one, when I had used it until it had become twisted and brittle, but never yet left a piece to be fruitlessly fished for. When one is broken, the cotton removes the broken point when the broach is withdrawn. In their use I never find it necessary to enlarge a canal. I feel that I can not deprecate too strongly this practice. None of us are unfamiliar with the disastrous results following many attempts in this direction.

If we stop to consider, we find that the canals we desire most to enlarge, are those most difficult to follow; furthermore, unpleasant results seldom arise from leaving such canals, after cleansing them as far as possible with the finest broach, and filling as far as chloro-percha can be forced.

In the cleansing and drying I have found little cones, or points

*Read before the Southern Minnesota Dental Society, at Waseca, Nov. 15, 1887.

of tissue paper, very useful. These were suggested to me by Dr. R. Mathews of Wichita, Kansas, and are made from triangular pieces, about one inch long by a half inch at the base, by rolling after the manner of candle lighters.

For carrying cleansing and antiseptic medicines to the apex, and into the tubuli, I know of no medium more effective than glycerine, because of its disposition to penetrate by capillary attraction, and its great affinity for water or moisture.

It is not my purpose to speak of the different medicinal agents, but will give it as my belief that nothing should be used which will seal the mouths of the tubuli, until they have been thoroughly cleansed. If septic, render aseptic. If this sitting is for the removal of recently devitalized pulps, or if we find entire absence of pericemental inflammation, but sensitiveness, and, it may be, slight bleeding at the apical end; or if there is a fistulous opening upon the gum, I can see no advantage in deferring the filling of the canal to another time. If we have blind abscess, or pericemental inflammation, I deem it wiser to wait, but the canal should be closed.

I believe that the Listerian principle should be followed in these operations, and obedience to its laws will result in the same benefits as in other surgery. Where it seems unwise to seal a canal, hydronaphthol cotton is an excellent dressing with which to stop the cavity, as it allows the egress of gases, while it renders inert, air or fluids which may gain ingress through it. The passage of fluids may be retarded by saturating this cotton with fluid cosmoline, or vaseline.

Before filling the canal, it as well as the tubuli should be thoroughly desiccated. As for the filling material, all agree that the canal must be perfectly filled with some material not liable to disintegration or decomposition. Substances which do not of themselves fulfill these requirements, have been employed after having been medicated in some way. I will not condemn such practice, nor that of using lead points or gold, either in ropes or wire; but I shall commend to you two materials — oxy-chloride of zinc and chloro-percha. With the former we are liable to have apical irritation; besides it is difficult to introduce it into fine or tortuous canals. To offset these objections, is its well known therapeutic power, which makes it an excellent preservative. In the latter

we have a material which can be easily forced to parts remote and difficult of access, but in large canals giving space for much bulk, its liability to shrink and crawl, render it objectionable. This may be remedied by using in conjunction slender points of gutta-percha — they also serve as a piston to drive it home.

Considering the strong and weak points of both, can we not advantageously combine them? — chloro-percha for the apex, and oxy-chloride for the remainder of the canal and pulp chamber? At the suggestion of Dr. G. A. Bowman, I add a few grains of iodoform to the chloro-percha.

Having given the root, if intending to attach a crown, the few days rest which I consider advisable, to enable it to recover from any irritation which may have been set up, we are ready to elect which of the many crown operations we shall employ. If a molar or bicuspid, shielded from view by a mustache, the gold shell-crown is unobjectionable from an artistic point of view; and being the strongest, I should select it. Where this would be unsightly, we must choose a porcelain, or porcelain-faced crown.

First for the foundation. To protect the root from further decay, and prevent possible splitting, nothing can be superior to a cap; this may be of gold, or combination crown-metal. It is hardly necessary for me to state that the root should be shaped and beveled, to insure a close fit; or that the edges of the band should be thin, smooth, and not infringe upon the process at any point, yet pass well beneath the free margin of the gum. Neglect of these points, is the cause of most of the mischief which follows the engrafting of crowns.

In setting a Bonwill, Logan, or any porcelain crown, I believe the extra labor and expense of first making a cap over the end of the root, will be amply repaid in the protection afforded that root. The well known and commonly used porcelain-faced crown has some serious defects — its liability to fracture or chip off, leaving a wreck which must be removed for repair, and the dead opaque appearance, given by the metal backing, render its employment in many cases very undesirable. These drawbacks have caused many to seek some operation which would exclude these objections. My own method for a long time, was in combining the Bonwill crown How screw-post and a gold band, without any attempt to unite them, before attaching them to the root

with cement. This gave perfect satisfaction in scores of cases, and the number that have needed repair in a period of five years, is an agreeably small percentage of the whole. Dr. Horatio C. Meriam has taught us that these may be united with jewelers' enamel, which will flow upon gold of any carat we use, under the ordinary blow-pipe flame. We need not confine ourselves to the Bonwill, but may use the Brown, Logan, or any of those solid crowns, the English tube-teeth, or even the counter-sunk tooth, designed for rubber work.

Without consuming more time in description of methods, I will call attention to some points which should be observed. The shape of the natural teeth of the patient should be carefully studied and copied in every detail, paying especial attention to the lingual surface, as thickness or bungling shape here may materially modify the formation of articulate sounds. The contour and contact with its fellows of the same maxilla should be maintained. Another important point is the occlusion; a crown should never be in the least degree too long, but may with advantage be a trifle short, especially if pericemental inflammation is feared; this shortage will be overcome and a perfect occlusion established in time. Where a crown is subjected to rotary strain, provision should be made against it in the choice of the dowel-pin. If How screw-posts are used, safety lies in inserting two.

It is not alone upon those roots which have been shorn of their crowns that we may place artificial crowns; but they may be used in many cases where formerly were shown those works of art known as contour or display fillings that have too often been inserted in teeth too frail to withstand the strain, at an enormous outlay of time, patience, vitality and skill on the part of both patient and operator.

In the engrafting of crowns after drawing upon mechanics for the requisite elements of strength, we should consult art that our art may be concealed.

PROCEEDINGS OF SOCIETIES.

CHICAGO ODONTOGRAPHIC SOCIETY.

PAPER BY D. C. BACON, D.D.S., ON COMPARATIVE ODONTOLOGY.

In presenting the subject of Comparative Odontology, it has not been my intention to go into an elaborate discourse—to give a vast amount of meaningless statistics in words that mean little, but to give a few classified facts in as plain and comprehensive a manner as possible.

The subject is one to which the average dental practitioner pays but little attention, partly owing, no doubt, to the lack of interest, and partly to the fact that a thorough knowledge of the size, form and number of all the teeth of the lower animals would not enable one to become a good operator, or a skilled mechanical dentist.

I think, however, that the satisfaction of knowing that we are at least acquainted with the principal facts relating to the teeth of animals which are familiar to us, will repay us for the time spent in their consideration; as much so, perhaps, as time spent in learning the fifth layer of muscles of the back, the boundaries of Scarpa's triangle, or many others of the so-called "necessary requirements" of our dental institutions.

The teeth of animals present such an endless variety in number, form, location, use and mode of attachment, that for convenience and simplicity we divide the animal kingdom into four classes, viz.: Mammals, birds, reptiles and fishes:

Mammals, as a rule, have teeth. There are a few exceptions. The three species of ant-eaters are examples of the strictly edentulous mammals.

The number of teeth in this class vary from one to nearly two hundred, and dentitions from one to two, no mammal having more than two dentitions. As a standard of comparison in describing mammalian dentition, odontologists have adopted a formula or typical set of teeth accepted as to number and variety, and consisting of the following on each side, commencing at the median line: $I^3C^1B^4M^3=44$.

In speaking of the number of teeth an animal has, we say it has such or such a number more or less than the typical set. The pig and horse are common examples of animals having a typical set.

Man has twelve less—lacking four incisors and eight bicuspids.

The male norwhal is an example of the monodon, having but one spiral tooth, which develops into a formidable weapon ten or twelve feet long. Others of the cetaceous or whale class have embryonic calcified teeth which are succeeded by whalebone in the upper jaw. They have but one dentition. The elephant has never more than one or parts of two teeth in use on each side, lower and upper, and two tusks more or less developed on the upper jaw.

The usual number for rodents is twenty, but hares and rabbits have twenty-eight each.

The armadillo has ninety-eight teeth, the common porpoise between eighty and ninety and the true dolphin from one hundred to one hundred and ninety—the maximum number of this class, while the average number is thirty-two. In the class reptiles—chelonians, including tortoises, terrapins and turtles, there are no teeth. The jaws are covered by a sheath of horny substance cut into trenches in the carnivorous species, and adapted for both cutting and bruising in the vegetable feeders. No species of toad possesses teeth, neither the horny covering of the jaw. Frogs have teeth in the upper but not in the lower jaw. The number in this class is more than in mammals, and is not constant.

The teeth of fishes offer a greater and more striking series of varieties than any other class of animals. As to number they range from 0 to thousands. A few classes are edentulous. The tench has a single grinding tooth on the occiput opposed to two dentigerous pharyngeal jaws. In the pike and many other fishes the mouth is crowded with countless numbers of teeth.

LOCATION.

The teeth of mammals are all located in the maxillary bones, and none are in a continuous row except in man, all others being separated by a space called diastema occurring at the junction of the maxillary and premaxillary bones.

The teeth of reptiles are developed on the maxillary, palatine, vomer and pharyngeal bones. Of fishes on maxillary, palatine, pharyngeal bones, and on the tongue and gills.

ATTACHMENT.

There are exhibited in animals three modes of attachment of teeth. The most common of these is union by implantation in a socket, or gomphosis, and this is common to all mammals and some fishes.

The second mode is by bony union or ankylosis, and is the usual attachment of teeth of reptiles and some fishes.

The third is by means of fibrous membranes to be found in reptiles and fishes. In the shark and angler the teeth are moveable, their base being tied to the jaw by ligaments.

In the angler the ligaments do not permit the teeth to be bent outward beyond the vertical position, but yield to pressure in the opposite direction, by which the point of the tooth may be directed toward the back of the mouth. The instant the pressure is removed the tooth flies back into its erect position from the elasticity of the ligaments, serving to prevent the escape of its prey.

FORMS.

The forms of teeth are modified to suit the purposes for which they are used. The incisive form as found in man is much modified in other animals. Those of the rodents are long and curved in form, describing a segment of a circle and have their sockets extending from fore to back, being so arranged that the vertical pressure can not injure the persistent pulp. The teeth as worn off or broken off by accident are supplied by the persistent pulp. An example of the growth from this pulp may be seen when a tooth is completely destroyed, the opposing tooth continuing to grow as long as the animal lives. The cuspids develop into all sizes, from a mere papilla to enormous tusks. The bicuspid and molars are of various sizes and shapes, being adapted to the carnivorous, herbivorous or mixed feeding habits of the animal.

The flesh-feeders, as the lion and hyena, have sharp cone-shaped cusps, the jaw having a vertical movement, being especially adapted to crushing bones and tearing flesh. To better serve that purpose they are belted at the base of the crown by a ridge of enamel extending over and protecting the gums.

The herbivorous animals have teeth well-suited to the grinding uses to which they are put, being broad, flat and laminated.

Of the uses of teeth it is needless to speak. Suffice it to say that they are used as weapons of offense and defense, as aids to

locomotion, construction, transportation, reduction of food, and speech, etc.

The poisonous reptiles have a canal in the fang. In biting, the fang of the tooth presses against the poison-sack, forcing some of that liquid through the canal into the wound. The teeth of reptiles have but one fang or root.

It is unnecessary here for me to dwell upon the histological structure of teeth, or the chemical composition of the different constituents which enter into their formation. I wish, however, to call attention, briefly, to the modifications of dentine. First, that which is called vaso-dentine. This modification contains vascular canals which remain uncalcified and permanently carry red blood into the substance of the tissue. This is often found in combination with true dentine, as in the incisors of certain rodents and the tusks of the elephant.

The second kind, called osteo-dentine, contains radiating cells, and very closely resembles true bone. There are a few kinds of fish in which the teeth consist only of modifications of dentine, the osteo-dentine being external and performing the office of enamel. In the horse the first bicuspid is called the wolf-tooth. It is generally lost while the animal is quite young, but when retained is said to affect the eye, causing blindness.

The teeth of ruminants are composed of alternate strata of dentine and enamel, which wear differently, leaving a milled surface well adapted to the purposes served. Ruminating animals have no upper incisors and cuspids.

The incisors of the horse are distinguished from those of ruminants by the greater length and curvature, and from those of all other animals by the fold of enamel which penetrates the crown from its flat summit like the inverted finger of a glove. When the tooth begins to be worn the fold becomes an island of enamel enclosing a cavity partly filled with cement and partly by the *débris* of food, and this is called the mark by veterinarians.

In aged horses the incisors are worn down below the extent of the fold and the mark disappears. This cavity is usually obliterated in the first incisors in the sixth year, in the second incisors at the seventh year, and the third, or outer incisor, at the eighth year in the lower jaw. The mark remains longer in the upper jaw.

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INTERNATIONAL DENTAL CONGRESS.

The time has arrived when decisive steps should be taken with a view of convening an International Dental Congress. A great deal has been said on the subject. The necessity for holding such a congress has been urged frequently, and the benefit to be derived from such a body has been fully set forth at various times. The meeting of the Dental and Oral Section of the International Medical Congress has been held, and no antagonism between it and an International Dental Congress exists; members of the section referred to have pledged their support and cordial aid in behalf of a dental congress, and in fact all barriers to a successful meeting are absent. Dental nomenclature is in a chaotic state—in such a demoralized condition that it is entirely beyond recognition; it might almost be said that no nomenclature exists, and this subject will certainly find no remedy unless it be before the tribunal of all nations. Then, and not till then, will scientific, sensible and forcible words be employed to express the names of subjects which are so feebly and improperly designated by the present inadequate system.

The *entente cordiale* of the dental profession is not what it should be. From a mistaken view of Americans and America's institutions the feeling of dentists in European countries is not of the nature calculated to the welfare of the profession, and, no doubt, much of this strained relationship is due to lack of intercourse and acquaintance.

The indications are plain that an International Dental Con-

gress must meet, and this very soon. We do not know whether it is purposed to organize a Dental Section in connection with the Medical Congress, to be held at Berlin, in 1890, or not; but suggest, with no intention of interfering with any section of that congress, that an International Dental Congress convene at Paris, France, in September, 1889, immediately following the meeting of the American Dental Society of Europe, in that city. In view of the fact that a Dental Section existed in the Medical Congress, at Washington, in 1887, it is but just that a meeting, such as is proposed, should be held in Europe, and that the dentists of the United States should be the moving spirits in the enterprise, and then what more could be desired than that the second tri-ennial meeting of the International Dental Congress should be held in conjunction with the World's Exposition, in commemoration of the four hundredth anniversary of the discovery of America, to be held at Chicago, in 1892.

THE DISCOVERY OF CHLOROFORM.

Since the unquestioned value of this anæsthetic was satisfactorily demonstrated, the medical world has been endeavoring to decide who its discoverer was, and to whom the world owes its tribute. At a recent meeting of the Chicago Medical Society, a committee appointed to investigate the claim of O. Guthrie, reported that, after careful investigation, it was ascertained beyond question that O. Guthrie's grandfather, Dr. Samuel Guthrie, of Sackett's Harbor, N. Y., discovered chloroform, and is entitled to all honors. The report of the committee was concurred in by the Society, and hence it has become the Society's own act. "Three men lay claim to this discovery — Liebig, Soubeiran, and Guthrie. Liebig's claim of priority rests on the publication, in Poggendorff's *Annalen* (23,444), in November, 1831, of the result of an effort to decompose alcohol with chlorine. He called his residues 'a new chloride of carbon' and 'formic acid.' Soubeiran published his paper on 'Ether Bichlorique' in the *Annales de Chimie et de Physique*, in October, 1831, but Liebig, in 1872, showed that the October number of that journal was not printed till January, 1832. Liebig, very strangely, does not say

a word about Dr. Guthrie's claim, which in 1872 had been on record for forty years.

"In the January number of Silliman's *American Journal of Science and Art* for 1832, there is an article by Dr. Samuel Guthrie, dated September 12, 1831, in which he speaks of his preparation of a bottle of his alcoholic solution of chloric ether. In the number of Silliman's journal, printed in October, 1831, Guthrie speaks of having had his new ether on hand for over six months."

It is a cause of considerable gratification that an American should be accorded the honor of so important a discovery. The proximity of the dates at which the reports of the persons claiming to have been the discoverers were made, illustrates the importance of the publication of magazines, dental and medical, as well as other scientific journals at the time indicated in their pages. We have seen numbers of dental journals, but recently issued, which antedate occurrences chronicled therein by several weeks.

POPULAR DENTAL EDUCATION.

From what we have recently learned it appears that it is more than probable that the subject of popular dental education will soon receive the consideration the importance of the subject merits. Dentists whose *clientele* is conservative, educated, and to whom the care of the dental organs is a matter of course, are not in a position to judge of the amount of ignorance yet prevalent. Nor, indeed, can any dentist form even an approximate estimate upon the subject. At the last meeting of the American Dental Association the following resolution was referred to one of the Sections:

Resolved, That Section II be directed to report at the next meeting of this Association a plan or scheme for the introduction of a course of elementary instruction in dental histology, anatomy, and hygiene into the public schools, in accordance with the suggestion to that effect in a report of the Section.

In accordance with this resolution, we are told, inquiry has been made as to the view which will be taken by the public schools throughout the country in relation to this matter, and so far the reports are highly encouraging. While many do not deem the object of sufficient importance to be made the subject of

teaching, others are of the opinion that much good can be done, and they cordially welcome the proposition. The superintendent of schools in a city, having a population of 65,000, says: "We have, in accordance with our State laws, introduced the study of anatomy, physiology, and hygiene into our schools. The subject of the teeth, of course, comes in as a part of this instruction, and has already created a demand for toothbrushes in quarters where they were before unknown." The subject will be fully presented at the meeting of the American Dental Association, in September next.

CLAMPS.

Of the many smaller accessory appliances to be found in a well-equipped dental cabinet, none are more frequently used, perhaps, than the rubber dam clamp. That there is room for a reasonable amount of objection to the excessive use of these instruments will not be denied; the plea being made that whenever the dam is used posterior to the canine tooth, it must invariably be accompanied with an application of the clamp. This we term excessive use, and in the majority of cases can be reasonably dispensed with, much to the comfort and gratification of the patient, and in nowise detrimental to the successful prosecution of the operation.

A glance at the dealers' catalogue, and sometimes the advertising pages of a dental journal, will reveal a formidable array of these appliances, many of which are not worth the space devoted to their representation, in so far as practicability is concerned. The Moore set of clamps are among the best for general use, from the fact that they are designed with a view of fitting the parts to which they are applied, and more especially the gum festoons.

Dr. G. V. Black has recently designed a clamp—appropriately naming it the "Omega"—which is constructed on the principle of touching the tooth at three points only, regardless of its position. This enables one to adjust the clamp without impinging on the soft tissues to any great extent, and at the same time a firm grip is established, which is sufficient to prevent any rocking movement of the clamp, or further encroachment on the gum

by slipping. This clamp seems to be especially applicable to conical crowns, being much less likely to slip or change position than others in use. Cavities situated on the labial surfaces of incisors and the buccal surfaces of molars and bicuspid extending well under the gingival margin of the gum, usually call for a clamp of a character which will enable the operator to force the gum away, and at the same time retain the rubber dam well in position. Dr. D. B. Freeman has perfected a clamp which seems well calculated to fill this want in a manner superior to anything heretofore offered for that purpose. This clamp also possesses the merit of being almost self-adjustable, and must be seen and used to be appreciated. The use of heavy rubber dam will in a great measure overcome the tendency to use clamps in many instances; admitting that the heavy dam is a little more difficult to adjust, yet in the end it is much more satisfactory, from the fact that its unyielding nature prevents wrinkling or collapsing, a fault which is quite common when using the lighter grades.

DR. MARSHALL'S LETTER.

The March *Archives* in an editorial regarding Dr. Marshall's letter, published in the same issue, attempts to analyze the motives of the REVIEW in declining to publish it.

The letter as offered was refused solely on the ground that it did not produce facts and figures in correction of the alleged "misstatements," and because of its imputation of wrong motives to the editor.

The REVIEW freely offered Dr. Marshall space to correct whatever of error had been published, provided his letter was freed from language calculated to engender discussion of a personal nature.

The *Archives* is assured that the attitude of the REVIEW toward the question of the Relation of Dentistry to Medicine was not a factor in the case.

ADVERTISING.

There is a method of advertising which needs the prompt condemnation of all right-minded professional men. It is dangerous because of its insidiousness. It would be infinitely more honor-

able to advertise openly in the public prints, than to make a holy pretense of educating the popular mind concerning their teeth, as a cloak, under which to advertise to prospective patients, the name, location, competency, and wares of an enterprising dentist. This may be accomplished by sending out in your community a sheet purporting to be "a local edition of your own." These are furnished in quantity at reasonable rates, by a philanthropic Toledo D. D. S. And yet this unconscionable practice is promoted (thoughtlessly, we think) by dental journals, which have upon their lists of editors hardly a man who will endorse it.

REDUCED RATES TO CAIRO.

The Chicago Dental Society committee have already secured a rate to the Cairo meeting of the Illinois State Dental Society in May, of one full fare for the round trip. There is a probability of securing a still greater reduction, with the privilege of returning by way of St. Louis. These rates will be free to all dentists (whether members or not) and their families. It is a time of the year when all need rest and change, and such liberal terms will insure a large gathering.

DR. HARLAN.

The February issue of the *Journal of the British Dental Association* in its report of the recent meeting of the Odontological Society of Great Britain gives an abstract of the paper read by Dr. Harlan on "Management of Pulpless Teeth from the Standpoint of Daily Practice." The interesting discussion which follows is also given.

Dr. Harlan will be back at his editorial post early in April.

DOMESTIC CORRESPONDENCE.

HORSES' TEETH.

To the Editor of the Dental Review :

DEAR SIR—In Dr. Davis' paper on horses' teeth, published in the December REVIEW, he makes the statement that horses'

teeth grow continuously during life, and gives Clark as his authority. Although this is generally accepted by horsemen as true, I consider it a mistake.

Tomes says horses' teeth are not continuous growers, and I don't think it will require much investigation to prove him correct.

C. B. SAWYER,

Jacksonville, Illinois, Feb. 11, 1888.

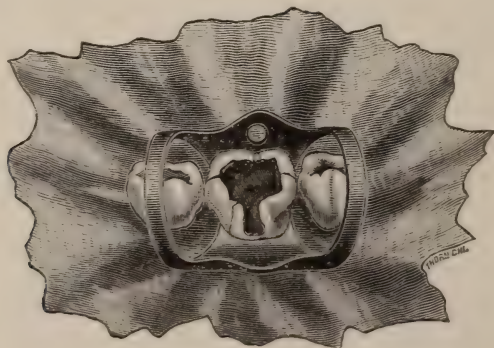
Dentist.

CLAMPS.

To the Editor of the Dental Review :

DEAR SIR—You are well aware of my idea of loop-clamps for holding the dam in place while operating on labial and buccal cavities of decay in both the anterior and posterior teeth.

Clamps for other cavities of decay have been so unsatisfactory in my hands, especially for molars, that I discarded their use for many years, relying upon the aid of beads and ligatures to retain the dam in place.



This method has the great advantage of allowing the patients to close their teeth in the act of swallowing, and the objection also of allowing the dam to fold over the tooth being operated upon, and obstructing the vision at times.

Nearly all the molar clamps I have tried were so high that the patient could not close the teeth to swallow without tilting, and sometimes displacing it entirely.

I presume this was due to my lack of judgment at the time, in the selection of those properly adapted for the work.

Again, they were so stiff and rigid they would spring from place at the slightest provocation.

I purpose presenting you with a cut of my ideal loop clamp for molars and bicuspid, describing some of its advantages.

First—Its diameter is large, holding the dam well out of the way, giving unobstructed vision of the cavity.

Second—It is low, enabling the patient to nearly close the teeth in the act of swallowing, which, when easily performed, does not excite unnatural action of the salivary glands.

Third—Its shape and bearings are such that when the teeth come together the clamp is pressed upon at its anterior and posterior borders at nearly the same time, and the tendency to tilt or rock is counteracted, allowing the patient to swallow without fear of its displacement, and at the same time prevents its impinging or slipping down on the tooth.

Fourth—It is not so stiff and rigid as to spring itself loose from the tooth.

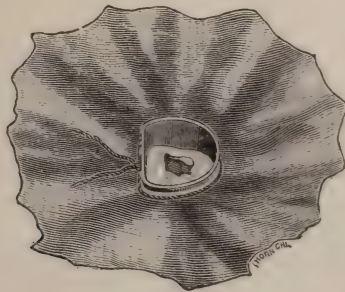
Very courteously,

DANIEL B. FREEMAN.

A NEW METHOD OF APPLYING THE RUBBER DAM TO TEETH PARTIALLY OR WHOLLY BENEATH THE GUM MARGIN.

To the Editor of the Dental Review:

DEAR SIR—This device consists of a band of any thin metal which has previously been fitted around the tooth so as to fit snugly at the cervical margin, excluding all or most of the saliva; then



remove the band; punch hole in rubber dam; pass it around the band and apply ligature (all of which is of course done out of the mouth); then replace the band on the root, and fasten back

the dam. You are now ready for treatment or root filling preparatory to crowning; or if you wish to build up with amalgam the band forms the matrix for the same; before inserting the amalgam, oil inner surface of the band, and place large blunt instrument upon the filling when the band is being removed, or allow it to remain on until the amalgam becomes hard.

C. F. HARTT.

317 W. Madison street, Chicago, Ill.

FOREIGN CORRESPONDENCE.

LETTER FROM RUSSIA.—THE DENTAL SOCIETIES.

To the Editor of the Dental Review:

DEAR SIR—Within a few years after the successful establishment of the dental school, the first two dental societies of Russia were organized, and both are located at St. Petersburg. The first dental society, of which immediately upon its organization, the founder of the dental school, M. Wazinsky, was the president, controls the dental school, which has over a hundred pupils, who each pay a tuition of 100 rubles per annum. The course extends over three years. Admission is gained by presenting a diploma of the fourth grade in college, or by passing an examination corresponding to that grade. The organ of the society, *Suborachebny Vestnik*, is edited by the secretary thereof, Mr. Sinitzin. Last winter a clinical course was given to doctors of medicine from the provinces, who took an interest in dentistry. The course was conducted by M. Ginrbourg, M. D., who labors principally in this field. Eighteen physicians attended the course. Many of the members of the society are on the clinical staff of various hospitals and charitable institutions.

The membership of the second dental society is composed principally of foreigners, most of whom are eminent practitioners, having practiced in St. Petersburg a number of years, and they are quite well known. The society numbers fourteen members, and the proceedings are conducted in the German language.

The first society has offered a prize for the most popular and

best work on dental hygiene, to be generally distributed among the people at five kopecs per copy.

While Russia is perhaps slower in inaugurating movements calculated to advance the interests of the dental profession than other countries, within the last few years much has been done which is designed to elevate the profession and benefit the many million subjects of the Czar of Russia.

Yours respectfully,

HELENA VONGL DE SVYDERSKY, D. D. S.

ST. PETERSBURG, Russia.

REVIEWS AND ABSTRACTS.

L'AVENIR DE L'ART DENTAIRE EN FRANCE (Etude critique sur le projet le loi de 1886) par E. Lecaudey, Medecin-Dentiste, Directeur Honoraire de l'Ecole Dentaire de Paris, President de l' Association Généræle des Dentistes de France. Paris: Ecole Dentaire, 1888.

This is a critical dissertation upon the law of 1886, governing the practice of dentistry in France, and upon the future of dentistry as the result of that law. One hundred and fifty-one pages within paper covers.

THE EVOLUTION OF IMMORTALITY—Or Suggestions of an Individual Immortality Based upon Our Organic and Life History. By C. T. Stockwell. Chicago: Charles H. Kerr & Co., 1887. Price, \$1.00.

The author of this little sixty-nine-page volume appears to us in an entirely new light. While well known as a professional writer and thinker, of acknowledged ability, we have not hitherto known him as a metaphysician, engaged with so grave and important a question as the immortality of the soul.

The reasoning and conclusions of the volume, while presented in somewhat of a different light, sheds nothing new on the subject, nor indeed—if we divine the author's intention aright—does he intend that it should so do. An effort is made to prove the future from the past, similes of nature's laws and processes, circum-

scribed, defined and understood, are made to illustrate—prove, if you please—the workings and results of spiritual changes and phenomena not so well defined and understood. Backward, into the hoary ages of the past, the writer leads us to Him—the Ego, forward into the future, bright and glorious, to Him—the Ego, and 'tween these two, he skillfully and accurately traces life, cell and embryo, to cell and inorganic matter, but the link at each end—as in centuries past without number, is missing, missing, but a link true, yet withal missing.

The book is one of the best written on this topic, with which we are familiar. The logic is as near correct as so subtle a subject permits it to be. The style is fascinating, and to read it is pleasant. Typography, printers' and binders' art leave nothing to be desired. Buy it.

DENTAL METALLURGY.—A Manual for the use of Dental Students.

By Chas. J. Essig, M. D., D.D.S., Prof of Mechanical Dentistry and Metallurgy in the Dental Department of the University of Pennsylvania. Second Edition, Revised. Philadelphia: The S. S. White Dental Manufacturing Co.; 1888. Cloth; pp. 268.

This practical work which has become the text book on metallurgy in most of our dental colleges, has undergone revision by its author, who says in his preface to the second edition: "I have therefore carefully revised the work, and while it has, not been greatly enlarged, the more recent improvements in the reduction of metals and the formation of alloys and amalgams used in dentistry, have been incorporated." The aim of the author to avoid the introduction of extraneous or merely hypothetical matter is so entirely successful that it gives to the student interesting and profitable reading. The need for more text books after this order is clearly indicated by the perusal of this volume. The absence of glittering generalities and verbiage will surely commend it to all practical thinkers.

ERYTHROPHLEINE—The active principle of Erythrophlœum Guineense.

"From a most interesting paper, read two months ago (January 11th, 1888,) before the Medical Society of Berlin, by Dr. L.

Lewein, I extract the following concerning a drug that promises much. If it possess the properties and power that Dr. Lewein positively states it does, it will probably supersede cocaine, because of the advantages it presents over even that valuable alkaloid.

The Hydrochloride of Erythrophleine (made by E. Merck, of Darmstadt,) is readily soluble in water. A *two per cent.* solution in dog's eye renders it insensible for from 10 to 24 hours. This solution is *much stronger than need be* for anæsthetic uses, as will be seen as we proceed; for Dr. Lewein states that "solutions of the strength of one-fourth or one-tenth or one-twentieth of one per cent. produce anæsthesia of the cornea and conjunctiva, continuing for from several hours up to two days, and gradually decreasing in intensity during that time. The action is altogether local, and if a solution of it be injected into the *eyelid* of an animal, this becomes so insensible that touch does not induce motion, while the eye itself retains perfectly its sensibility."

"In frogs which have been tetanized, no further tetanus can be produced upon the injected point. After an injection of Erythrophleine in a limb, it can be pierced without any reaction. After a subcutaneous injection of an amount equal to one-fourth of a hypodermic syringe of a two per cent. solution, such an insensibility is produced in these animals in about fifteen minutes at the point of injection, that touching them with concentrated sulphuric acid, or with a red hot needle, is not felt."

"I, myself, dropped into a wound in my finger, which had been caused by glass and was very painful, a few drops of a two per cent. solution, and the pain which had before that been persistent and had increased with pressure, ceased after about ten minutes, and could not be re-established by the firmest pressure. This analgesy persisted for about an hour and could be continued for entire days."

As to the general constitutional effect of this drug, Dr. Lewein says but little, except that in therapeutic doses it has a "digitalic effect upon the heart."

His investigation began in an attempt to determine the source of the "Haya poison," used by the natives of western Africa as an arrow poison, and little by little, his experiments led to the assurance that it was prepared from the Erythrophlœum."

Gösta Hahl describes in the *Deutsche Monatsschrift für Zahnheilkunde* a method of making cavities in artificial teeth for fillings, in use by V. Benson of Goteborg. With a corundum disk a cavity is cut in the artificial tooth. On the anterior surface so much is cut away as is desired to be exposed to view when filled with gold, but on the posterior surface, the cavity is dove-tailed, yet in this condition gold could not be retained therein ; but when the tooth is vulcanized with other teeth to a rubber plate, the missing wall of the cavity is supplied by the vulcanite and the introduction and retention of a filling under these circumstances is an easy matter. If the tooth is to be soldered to a gold or other metal plate, the cavity should be cut in the same manner, the backing is allowed to project far enough up to supply the missing wall of the cavity. To assist in the retention of the gold in these cases that portion of the backing facing the cavity should be somewhat roughened.

From the *Western Electrician*: " Dr. Whitefield, before the Chicago Electric Club Monday evening, succeeded in settling a question that has been in dispute among dentists as to the electric action of amalgam and gold fillings in the same tooth, or even in the same mouth. One doctor of dental surgery has written that " we have found that if the two metals touch in the electric battery there is no longer a current, it is dead, no shock is produced, and it is just the same when the metals are in a tooth in the presence of an acid, as it is out of the mouth, in the laboratory ;" all of which was cited in proof of the theory that if amalgam and gold fillings in the same tooth, for instance, were joined, no electric action would be set up. A current would, however, still be generated and the joining of two fillings would simply amount to a short circuit. That a current was generated by amalgam and gold fillings, even when they were insulated from each other when placed in water, was conclusively shown by bringing a galvanometer into circuit. The point is one that may be combatted, but the evidence produced by the galvanometer can not be controverted."

The above is editorial ; the following is from the same publication and is a more detailed account of Dr. Whitefield's demonstrations.

“At the close of the description and illustrations of the methods of operating the engine, the speaker demonstrated beyond question the fact that fillings of dissimilar metals in the same mouth were disadvantageous, for the reason that by chemical action an electrical current was generated, and as oxygen and acids are attracted to the negative element of a battery, that it acted upon the tissues surrounding the gold filling in the tooth, and caused decay of that tooth. A piece of ivory was shown, in which fillings of gold and amalgam had been inserted. There was no electrical connection between the two fillings. The fillings were then connected in circuit with a galvanometer, then the piece of ivory was placed in water, and the needle of the galvanometer at once deflected, showing the generation of the current between the amalgam and the gold. The next step was to place salt in the water, and the needle deflected still more. The third step was to place the piece of ivory in the mouth when the needle deflected still more, and, as a crowning experiment, the speaker inserted the piece of ivory with its two different fillings in the body of a cucumber pickle, in which case the needle deflected as far as its construction would permit.”

PAMPHLETS RECEIVED.

Report of the Commissioner of Education for the year 1885-6. Washington: Government printing office, 1887.

Sixth annual report of the Illinois State Board of Dental Examiners, December 15th, 1887. This report to the Governor is extremely interesting because it contains a plain statement of the facts in the case between the State Board and Dr. John M. Cooper, and a copy of the decision of the Supreme Court regarding it. It is well for the public and the profession to have a clear understanding of both sides of this important case. It shows conclusively that the action of the Board “was not based upon unfairness, selfishness or prejudice.” It does show that the advice of their counsel, that they should stand upon their demurrer instead of answering in the lower court, was perhaps unwise, and that the courts do not always deal out justice.

The list of legally qualified practitioners on the register is published with the report, and numbers 1,030. The estimated number of actual practitioners is given as 925. The value of the

Report as a directory would be greatly enhanced was it corrected in regard to removals from the State, change of location within the State, deaths, and retirements from practice.

A copy of the report will be mailed by addressing the Secretary of the Board, Dr. C. R. E. Koch, 3011 Indiana avenue, Chicago.

Third Annual Report of the North Texas Hospital for the Insane. Published at Austin, Texas.

The Twenty-Fourth Annual Report of the Trustees of St. Luke's Free Hospital, Chicago, Ill.

The Health and Home Library, Vol. 1, No. I. A Quarterly olla podrida of medicine, psychics, literature, household recipes, and editorial opinions and advice. Chicago, Ill. Subscription, \$1.00 per annum.

Operations for Mastoid Diseases, by Seth S. Bishop, M. D., Surgeon to the Illinois Charitable Eye and Ear Infirmary, to the Illinois Masonic Orphans' Home, etc. Reprint from the Journal of the American Medical Association. By the same author. Statistical Report of 5,700 Cases of Ear Diseases. Classified by age, sex, occupation, disease, and causation. Also by the same author, Treatment of Chronic Suppurative Otitis Media.

Proceedings of the National Association of Dental Faculties, Fourth Annual Session, with constitution and codified rules governing the Association, and list of membership to January, 1888.

OBITUARY.

DR. GEORGE O. HOWARD.

Dr. George O. Howard died at his home, in Waukegan, late Saturday night, February 25th. His fatal illness was a severe form of typhoid-pneumonia, which began Thursday. He leaves a wife and seven young children.

Dr. Howard was born in Tionesta, Pa., in 1845. He graduated from the high school, and studied dentistry in Clinton, Mass. In 1863 he enlisted in the Third Regiment Massachusetts Cavalry, and served with great credit through the war of the Rebellion. He has since been West, practicing his profession in Galena, Chicago, and Waukegan, and latterly at Highland Park. The older members of the Illinois State Dental Society will remember the active and useful part he took in its meetings, especially when topics of practical application in operative dentistry were under consideration. He it was who first brought chloro-percha before the State Society as a canal-filling; he made and reported valuable experiments on the rela-

tive merit of mallets, and he had much to do in the development and perfection of the dental engine. He was one of the first to advocate the use of smooth-pointed pluggers.

He belonged to that rapidly-decreasing class who obtained their knowledge of dentistry as an apprenticed student, who elevated themselves and their profession by constant struggle in their daily work to improve the methods and means, which twenty years ago were so meagre. It was his frequently expressed and dearest wish in those years to have the advantages of a dental-college education.³

He was an accomplished operator, when good dentists were few. Thorough and conscientious in every operation he undertook, and possessed of the happy faculty of impressing patients with the fact that they were properly ministered unto, he gained high reputation, both with his *clientele* and in his profession. ¶

His lively interest in dental subjects, and genial qualities of heart, made him many friends, and always interesting to his fellow practitioners.

DENTAL COLLEGE COMMENCEMENTS.

UNIVERSITY OF IOWA.—DENTAL DEPARTMENT.

The commencement exercises of the dental department of the Iowa State University took place March 5th, 1888. The annual address was delivered by Rev. Samuel N. Watson. President Schaeffer conferred the degree of Doctor of Dental Surgery on the following:

A. E. Anger, Brooklyn.
J. E. Babcock, Watertown, Ill.
C. P. Beyer, Waverly.
F. T. Breene, Wilton Junction.
C. W. Cope, Atalissa.
E. S. Dawson, Maynard.
H. D. Hinkley, Lone Tree.
O. A. King, Blairstown.
J. A. Lovelady, Riverton.
J. A. Leonard, Fairfield.

H. V. McGregor, Mount Pleasant.
M. S. Overfield, Deerfield.
C. S. Percival, Hillsboro.
A. B. Palmer, Grinnell.
A. L. Punton, Mount Pleasant.
L. E. Roe, Columbus, Neb.
A. L. Rist, Algona.
J. E. Swain, Iowa City.
C. H. Sippel, Charles City.
C. S. Searles, Moline.

UNIVERSITY OF CALIFORNIA.

The seventh annual commencement exercises of the College of Dentistry of the University of California were held at Odd Fellows' Hall, San Francisco, Cal., November 29, 1887, at 8 o'clock, P. M. The address for the Faculty was delivered by L. L. Dunbar, D. D. S.—The degree of Doctor of Dental Surgery was conferred upon the members of the graduating class by E. S. Holden, LL. D., President of the University. The number of matriculates for the session was thirty-six. Graduating class:

Edward Livingston Davis, San Jose.
Joseph Dupuy Hodgen, Woodland.
Harold McKean Jones, Cloverdale.
Edward Maldonado, Virginia, Nev.
Robert Eugene Payne, Santa Cruz, Cal.
Charles Edgar Post, San Francisco, Cal.
Arthur Theodore Regensburger, San Francisco, Cal.

George Frederick Rodden, San Rafael, Cal.
George Walter Rudolph, Oakland, Cal.
Granvill Eugene Shuey, Danville, Cal.
Jennie Martha Simpson, Sacramento, Cal.
Otto Frank Westphal, San Rafael, Cal.

VANDERBILT UNIVERSITY.—DEPARTMENT OF DENTISTRY.

The commencement of the department of dentistry of Vanderbilt University occurred February 23d, and was more than usually interesting. The graduating class numbered thirty-three. The following is the list:

R. F. Acru, Tennessee.
H. E. Crumbaker, Pennsylvania.
R. W. Carroll, Texas.
J. S. Bailey, Mississippi.
J. R. Broadstreet, Mississippi.
S. G. Duff, Texas.
J. W. Fuller, Arkansas.
N. T. Harris, Alabama.
Fletcher Irons, West Virginia.
R. G. Jones, Alabama.
S. B. Kennedy, Georgia.
J. B. Keefer, Pennsylvania.
S. J. Lawrence, Tennessee.
E. D. Lankford, Alabama.
W. A. More, Arkansas.
H. M. Moorman, Michigan.
T. W. McKenney, Kentucky.

F. B. McCasky, Alabama.
Marvin McFerrin, Tennessee.
J. C. McCubbins, North Carolina.
Sid. Powell, Louisiana.
W. P. Perkins, Alabama.
J. H. Perreyclear, South Carolina.
F. M. Parker, Alabama.
W. F. Richard, Tennessee.
T. F. Robinson, Georgia.
J. B. Roberts, Missouri.
M. J. Salenberger, Illinois.
T. T. Thuxton, Alabama.
G. S. Vann, Alabama.
E. K. Wright, North Carolina.
J. P. Williams, Tennessee.
L. L. Yonker, Ohio.

Number of matriculants, 77.

UNIVERSITY OF CINCINNATI—DENTAL DEPARTMENT.

The forty-second annual commencement of Ohio College of Dental Surgery, now the dental department of the University of Cincinnati, was held in the college hall, Cincinnati, March 7th, 1888. The annual address was delivered by Rev. Dudley W. Rhodes. President G. W. Keely, D.D.S., conferred the degree of Doctor of Dental Surgery on the following named gentlemen:

D. S. Anderson, Ohio.
H. J. Bosart, Ohio.
E. D. Broadwell, Ohio.
H. W. Cleland, Ohio.
D. M. Clement, Ohio.
Mrs. Jesse Dillon, Ohio.
M. H. Evans, Ohio.
A. B. Fletcher, Ohio.
H. E. Harlan, Ohio.
F. Y. Herbert, Ohio.
J. W. Hillman, Ohio.
E. D. Hinkley, Ohio.
C. B. Hussey, Ohio.
I. F. Hussey, Ohio.
C. J. Lockwood, Ohio.
H. H. Robinson, Ohio.
C. A. Schuchardt, Ohio.
J. B. Schunck, Ohio.
H. T. Smith, Ohio.
Mrs. Z. V. Swift, Ohio.
T. D. St. John, Ohio.
J. P. Tudor, Ohio.
S. M. Ulrey, Ohio.

Edwin Waddel, Ohio.
W. W. Wallace, Ohio.
N. B. Hartwell, Indiana.
M. A. Menges, Indiana.
B. C. Reid, Indiana.
E. J. Ward, Indiana.
J. W. Cartmell, Kentucky.
C. B. Clark, Kentucky.
J. F. Rees, Kentucky.
W. C. Shankland, Kentucky.
O. T. Hanson, Illinois.
O. S. Mills, Illinois.
A. H. Rainey, Illinois.
B. L. Shobe, Kansas.
R. H. Updegraff, Kansas.
J. A. Henning, Missouri.
W. E. Scott, Missouri.
W. E. Gochenour, Wisconsin.
R. D. Rood, Wisconsin.
W. A. Windell, Canada.
J. F. Hardman, Iowa.
R. B. Foster, Minnesota.
T. H. Sexton, Pennsylvania.

? ? ?

BLEACHING TEETH.

TO THE EDITOR OF THE DENTAL REVIEW:

Dear Sir—Please reply to the following query in the columns of the REVIEW :
A central incisor had an abscess twelve years ago pulp-chamber filled with cotton (not by me) eight months ago; trouble; removed cotton; treated pulp-chamber with solution of bichloride of mercury and eugenol; filled root with solution of gutta-percha dissolved in chloroform, the cavity with oxy-chloride of zinc, and then covered with gold. No trouble, but the tooth has turned very dark, not only the crown, or that portion visible, but the entire root, so much so that it shows through the gum. The patient is now about forty years old. What is the cause, and what the remedy?

Yours truly,

Mt. Carroll, Ill.

JAMES W. CORMANT.

[From the letter of the writer we can not fully understand whether the pulp-chamber was filled with cotton eight months or twelve years ago, or whether the tooth began to give trouble eight months ago or now, but the reply one way or the other would be the same; hence, while these points are entirely obscure they do not effect the answer.

In those teeth where the root canals have been permitted to retain a putrescent pulp for a number of years—whether there is diseased condition beyond the apex of the root or not—they should generally not be filled immediately. Neither should roots, whose canals have not been hermetically sealed, be filled immediately after having been opened, and the walls of the canals exposed to the atmosphere. Whenever a dead pulp, or particles of food remain in a pulp-canal, the oxydized liquified or partially dried contents permeate the dentinal tubules, and where this soaking process is suffered to continue a long time the permeation is complete, even down to the farthest extremities of the tubules, thus reaching into close proximity to the enamel and the cementum. Now then, while the introduction of any remedy may purify, disinfect, or even bleach the canal itself, and even partly the dentinal tubules, the time is too short for even the most volatile of our known agents to reach the remote portions of the dentine. Nevertheless, the admission of air, either alone or dissolved (as much of it is) in solution in various liquids, has reached these remote portions and formed oxides with their contents. The immediate sealing of the canal offers a very favorable opportunity for the processes of oxidation to continue, and as the animal tissues contain a large percentage of carbon, the product of the oxidation is black; in other words, a black deposit is formed in the dentine near the enamel, and the cementum, resulting in what the querist terms “the tooth has turned very dark.”

The remedy lies in undoing what has just been described to be the condition, namely, either the removal of the oxides, by first accomplishing their dissolution, or by causing a combination whose color is other than brown or black. This can be accomplished in several ways, and the method perhaps best suited to this case is the application of sulphate of soda and boracic acid (100 grains of sulphate of soda to 70 grains of boracic acid). These substances are finely powdered and mixed

in a warm, dry mortar, and kept in an air-tight vessel, and in a dry place. Cleanse the root canals thoroughly, and close the apex of the root either with gold wire or gutta-percha; fill the root-canals and pulp-chamber with the powder, cover with bibulous paper, and introduce as little gutta-percha, warmed and softened, as is necessary to close the margins of the cavity, through the gutta percha, with a fine instrument make a small opening, through this introduce the point of a syringe and then inject a drop of water, immediately sealing the opening made for the syringe in the gutta-percha filling. The moisture produces a chemical reaction, resulting in the elimination of sulphuric acid. This operation may be repeated a number of times, the root and tooth should then be filled, as described on page 209, Vol. I, of the DENTAL REVIEW.—Ed.]

MEMORANDA.

Dr. James H. Prewitt died at Madisonville, Ky., December 31, 1887.

KANSAS STATE DENTAL ASSOCIATION—Meets at Topeka, Kan., April 27th.

MISSOURI STATE DENTAL ASSOCIATION—Meets at Warrensburg, Mo., July 10.

IOWA STATE DENTAL SOCIETY—Meets at Iowa City, Ia., May 1st, continuing four days.

NEBRASKA STATE DENTAL SOCIETY—Meets at Grand Island, Neb., May 15th, continuing four days.

MINNESOTA STATE DENTAL ASSOCIATION—Meets at St. Paul, Minn., July 18th, continuing three days.

A firm of dentists in London advertise that they will purchase old sets of artificial teeth.—*Exchange*.

The April *Review* will contain some posthumous papers from the pen of the late Dr. Geo. O. Howard.

The "Ohio College of Dental Surgery" has become the "Dental Department of Cincinnati University."

Mr. Lewis, of the firm of S. S. White Dental Manufacturing Co., of Philadelphia, was in Chicago last month.

Dr. W. B. Krapp, of Fort Wayne, Ind., is somewhat broken in health and intends to go south for some months.

The legislative body of Bavaria has recently refused to establish a dental department at the University of Munich.

VERMONT STATE DENTAL SOCIETY.—Meets at St. Johnsbury, Vt., Wednesday, March 21st, 1888, continuing three days.

The daughter of Dr. F. S. Whitslar, of Youngstown, Ohio, was married to Mr. Homer J. Carr, of Chicago, February 9, 1888.

The *Cosmos* is to be congratulated on its increase of size. It is hereafter to contain eighty pages of reading matter in each issue.

According to the *Jewelers' Journal*, by adding two per cent. of silicic acid to gold it can be melted in the flame of an ordinary lamp.

Dr. B. S. Palmer, formerly of Chicago, and more recently of Rochester, N. Y., has returned to Chicago, with a view of re-locating.

Dr. W. B. Farnham, a dentist seventy-six years of age, and who for many years practiced dentistry in Chicago, committed suicide last month.

The American Dental Society of Europe meets in Paris, France, September, 1889. Those who contemplate going should begin to lay their plans early.

Note the following errors in the February number: Page 76, "filling" in line 7 should read "fitting." Page 77, "plastic" in line 8 should read "parting."

The next meeting of the Texas Dental Association will be held in Dallas, Texas, commencing on the first Tuesday in May, and continuing for four days. T. H. LIPSCOMB, D.D.S., Cor. Sec'y.

Geo. W. Whitefield read a paper entitled "Applications of Electricity to the Uses of Dental Offices," before the Chicago Electric Club, Feb. 4, 1888, an interesting account of which appears in this number.

The German-American Dental College of Chicago, with a capital stock of \$10,000, was incorporated on February 13th last, by Fritz W. Huxmann, George F. Schaller, M. D., and John Irwin.

Robert Telschow, of Berlin, dentist of the Crown Prince (now Emperor Frederick III) of Germany, has received the degree of *Doctor medicinæ honoris causa* from the University of Marburg.

Dr. J. N. Farrar, of New York, is busily engaged in the preparation of his work on "Dental Irregularities." The work is now in press, it will consist of two volumes, 650 pages in each, and contain about 1,300 illustrations in all.

At the regular monthly meeting of the Chicago Dental society, held on Tuesday evening, March 6th, Dr. E. D. Swain read a paper on "Embryology" and Dr. G. W. Whitefield on the "Electrical Influences of Filling Materials."

The *Monatsschrift des Vereins deutscher Zahnkünstler*, has been discontinued with the close of the past year, thus leaving but one other journal in Germany — The *Zahntechnische Reform* — which is devoted solely to mechanical dentistry.

Erythrophleine, the new local anæsthetic, may be obtained in its different solutions or in its crystal (alkaloid) form from Geo. I. McKelway, Philadelphia, or Frank G. Somers, apothecary, corner Chicago av. and N. State street, Chicago.

The Kansas State Dental Association meets at Topeka the last Tuesday in April, 1888.

C. B. GUNN, Sec'y,
Leavenworth, Kansas.

Dr. W. Mitchell of London, Eng., calls our attention to the fact that he exhibited over a year ago a tooth crown of his own invention that has all the essentials of Dr. C. S. Case's, of Jackson, Mich., a description of which appeared in the January number of the REVIEW.

The meeting of the American Dental Society of Europe, which will convene in Paris, France, Sept. 1, 1889, promises to be a most interesting occasion. This is evidenced by the early preparation which is being made by its members. American dentists who contemplate a visit to foreign shores at that time, would do well to bear in mind this event, as no doubt they would receive a hearty welcome.

In 1887 the S. S. W. D. M. Co. alone manufactured 7,000,000 of artificial teeth and exported to foreign countries 2,000,000 artificial teeth. The increase in crown work has been so marked that the manufacture of the platinum pins for crowns alone, amounted to about \$10,000.

Ribbon paper, Nos. 5 to 9, is very handy in the laboratory to put about impressions, for the purpose of making casts, or under any other circumstances when soft plaster of paris is to be circumscribed within a desired space. It can be had for the asking in any dry goods or notion store.

Dr. H. B. Noble, Sr., of Washington, D. C., prepares a cement which sets under moisture and becomes very hard. It can be used as a splint to retain implanted or other teeth required to be held immovable, acting in these positions in the same way as plaster of paris would on a broken arm.

At the meeting of the Odontological Society of Great Britain, held in London on Monday evening, February 6th, Dr. St. George Elliott read a paper on "A System of Crowns"; Mr. J. Bland Sutton, a paper on "Odontomes", and Dr. A. W. Harlan a paper on "The Management of Pulpless Teeth from the Standpoint of Daily Practice."

According to the *Correspondenz-Blatt für Zahnärzte*, Dr. R. F. C. Baume, of Berlin, Germany, has received the title of professor from His Majesty the late Emperor of Germany. On Ludwig Göttinger, D. D. S., also of Berlin, the title of "dentist" has been conferred, and Dr. Dungelt, of Weisbaden, has received the royal cross from the late Emperor.

For the purpose of adding strength to rubber plates, B. Elverfeld, of Wildenbrück, Germany, according to *Zahnärztl. Wochenbl.*, uses chains of 14 and 18 karat gold. These chains are preferable to gold wire, because they conform to the irregularities of the mold, and when some of the links are slipped on the pins of teeth they materially aid in holding them firmly to the plate.

The police authorities of Berlin, Germany, have forbidden the appearance of advertisements of certain quack nostrums in the public prints. In the list appear a number of "tooth-ache drops," "syrups," "tooth pain-killers," and "renovators," which have undoubtedly been the source of much evil in the hands of ignorant persons. The reform is a good one, and might be imitated to good advantage in the United States.

Dr. T. W. Beckwith, of Sterling, Ill., sent us a few days ago some soft rubber washers to be used on the screw mandrel for carrying sand-paper disks. With them, disks can be changed very quickly by simply catching the edge of the disk, turning on or off, and they never slip. These washers are made from the worn out soft rubber polishing cups used in carrying powders for polishing fillings, cleaning teeth, etc. We have given them a trial and find them very useful.

The "Committee of Ten on the Enforcement of Dental Law," of the Chicago Dental Society, which was appointed about one year ago, has done some admirable work. In all about twenty persons have been prosecuted for practicing dentistry in violation of the State law. All cases which have been brought before a justice at all were won by the committee. Two cases have been carried to the county court, and one has been decided adversely to the interests of the prosecuted person who carried the case to that court. The committee lacks funds, and has temporarily suspended operations, but expects to continue prosecuting those against whom evidence has already been obtained as soon as more funds are received.

In the new tariff bill presented to Congress recently by the Ways and Means committee are included many articles of drugs used by dentists, and which are recommended to be placed on the free list. Among the articles enumerated we find beeswax, glycerine, iodine resublimed, alum, sulphate of copper, sulphate of iron, chlorate of potash, antimony, quicksilver, plaster of paris, when ground or recalcined, and all preparations known as essential oils, expressed oils, distilled oils, alkaline, alkaloids, etc.

The Centennial Exposition of the Ohio Valley and Central States, will be held at Cincinnati, O., July 4th to October 27th, 1888. The Department of Education consists of fifteen sub-departments, comprising everything pertaining to and every phase of education. Department thirteen embraces schools of medicine, pharmacy, surgery and dentistry. It is purposed to have papers read in this department relating to the advancement and history of these sciences in the territory northwest of the Ohio river.

ILLINOIS STATE DENTAL SOCIETY.—The twenty-fourth annual meeting of the Illinois State Dental Society will be held at Cairo, beginning Tuesday, May 8th, and continuing four days. This point has been selected because convenient for the dentists living in the southern part of the State, with the hope that many who have not hitherto met with us will do so this year; also for the further reason that it is easy of access to those living in other States, south, east and west, to all of whom a cordial invitation is extended. An excellent program has been arranged with clinics as a special feature.

C. B. ROHLAND, Pres.

GARRETT NEWKIRK, Sec'y.

LONDON, England, Jan. 31, 1888.

DEAR MR. EDITOR—Please excuse an admirer of your excellent journal calling attention to two grammatical errors in the January number. On page 42, line 12, you say:

We hope—that our pages will be freer from typographical errors than *it has* (should be *they have*) been in the past.

On page 51, last line but one, why not say:

In our practice we find gutta percha or oxychloride easier to use, etc., rather than: Gutta-percha or oxychloride, in our practice, *are* easier to use, etc.?

Yours faithfully,

J. HIGSON.

The president of the Chicago Dental Society received a communication a few days ago from J. Calder, D.D.S., of Evanston, Wyoming Ty., stating that in the spring of 1877 or 1878, he met a gentleman in Victoria, B. C., by the name of Paul Petrovich in whose mouth was a piece of bridge work constructed of gold and extending from the inferior cuspid of the left to that of the right and anchored into the pulp canal of each. Dr. Calder was informed by the patient that the work was done by a dentist in San Francisco, Cal., some time in the sixties. This piece of work was also examined at the same time by a photographer named Oregon C. Hastings, who now resides in Victoria, B. C. Dr. Calder states that the exact date when the work was done can be obtained from Mr. Hastings.

IOWA STATE DENTAL SOCIETY.—The twenty-sixth annual meeting of the Iowa State Dental Society will be held at Iowa City, commencing Tuesday, May 1st, continuing four days. An unusually interesting program has been prepared. Dr. G. V. Black, and others from neighboring States, will contribute, and the clinics will not be less interesting than they have been in past years. All the leading

features of operative and prosthetic dentistry will be demonstrated. The society has at Iowa City the advantage of the operating rooms and laboratory of the dental department of the State University. It is hoped that every dentist in Iowa will be present, and dentists from other States will receive a cordial welcome. The following are the officers: President, W. P. Dickinson, Dubuque; Vice-President, A. O. Hunt, Iowa City; Secretary J. B. Monfort, Fairfield; Treasurer, J. S. Kulp, Muscatine.

According to the *Hannoverschen Courier* of January 11, 1888, the recent decision of the higher courts of Germany, in relation to American dentists practicing in that country, will be enforced to the fullest degree, and dentists who are merely graduates of American schools, and not properly qualified under the German laws, as now interpreted, must discontinue the practice of dentistry. The *Frankfurter Journal* says that application having been made to the *Bundesrath* by American graduates, with a view to having the American degree recognized by the German authorities, and the application having been adversely acted upon, American graduates can not be considered legally qualified for the exercise of any branch of the healing art. Germany discriminates against American hogs and dentists very emphatically.

Dr. J. G. Templeton, of Pittsburgh, Pa., has suggested a very useful method of duplicating models, where there is a difficulty in securing more than one impression of the mouth: A model from the impression secured is prepared as for striking up a die for a metal plate, but instead of using molding sand, a mixture of molasses and glue, as used in the manufacture of printers' rollers, is melted in a water bath, and used. The model is placed on a flat surface, a band of tin surrounding it, and some thin plaster of paris poured around the edge to prevent the escape of the fluid. Pour in the mixture and set aside to cool twenty-four hours. You have as a result a mold of the model, of great toughness and elasticity, which will allow the duplication of any number of models, no matter how sharp the angles or heavy the under-cuts.

The Chicago Dental Club held an interesting session Monday evening, February 27th. Dr. E. M. S. Fernandez lectured on "Amalgam fillings," and Dr. Geo. W. Whitefield, of Evanston, Ill., demonstrated by some tests the galvanic currents present in the mouth between fillings of various metals.

TO THE EDITOR OF THE DENTAL REVIEW—*Dear Sir*: I have been using oil on my burs for finishing fillings, but found it unpleasant in odor and taste, both to myself and patients. Vaseline was brought to my notice, and I like it so well that now I use it not only on burs, but on sand paper and cuttlefish disks, and many times on corundum wheels, both for finishing fillings and cutting frail tooth-structure. Try it.

E. A. ROYCE, D.D.S.

Chicago, Ill.

An itinerant dentist in Ohio has solved the mystery attending the failure of so many fillings, in a manner quite original and unique. He had filled a certain cavity in the tooth of one of his patients for the third or fourth time within the same number of months, the filling having come out each time. The previous operation having been performed with amalgam he determined to try gold; so having first capped the "nerve" he proceeded to place within the tooth that magic auriferous metal. The operation finished, the patient departed for home, but on reach-

ing her dwelling place, discovered to her dismay that the gold filling was loose, so immediately retraced her steps to find out the cause of this new trouble. After a careful examination of the cavity and filling, by mirror and magnifying glass, the "doctor" then delivered his opinion in the following manner: "Madam, this tooth will have to be extracted, for it is utterly impossible to fill it, as the pulsations of the nerve are so great and powerful that it knocks the filling out!"

The following resolutions will be voted upon at the next regular meeting of the Chicago Dental Club:

WHEREAS, At a meeting of the American Medical Association, held in Chicago, in June last, a resolution was passed recognizing the graduates of dental colleges whose preliminary requirements, curriculum of study and time required upon the fundamental sciences of medicine and surgery were equal to the best medical colleges of the country, as eligible to membership in the Association, and

WHEREAS, We believe this action was the result of a conviction that specialists in dental surgery, who had been trained in the thorough manner described in the resolution were entitled to recognition as medical men, and

WHEREAS, Societies in order to avail themselves of the privileges of membership by delegation, it is necessary—according to the constitution—for them to adopt the Code of Ethics of the Association, therefore be it

Resolved, That this Club adopt the Code of Ethics of the American Medical Association.

According to the *Revue et Archives Suisses d'Odontologie* the following is the number of registered dentists practicing in Switzerland:

CANTON.	NUMBER.	CANTON.	NUMBER.
Appenzell, - - - - -	7	Schwytz, - - - - -	3
Argovie, - - - - -	11	Soleure, - - - - -	7
Bâle, - - - - -	25	St. Gall, - - - - -	12
Berne, - - - - -	18	Thurgovie, - - - - -	4
Fribourg, - - - - -	3	Tessin, - - - - -	3
Genève, - - - - -	29	Unterwald, - - - - -	3
Glaris, - - - - -	4	Uri, - - - - -	0
Grisons, - - - - -	3	Valais, - - - - -	1
Lucerne, - - - - -	11	Vaud, - - - - -	27
Neuchâtel, - - - - -	15	Zoug, - - - - -	2
Schaffhouse, - - - - -	4	Zürich, - - - - -	29
Total for Switzerland, - - - - -			231

Partial program of the coming meeting of the Iowa State Dental society: L. C. Ingersoll, Keokuk, New and original illustrations of tooth pulp as a ganglion; A. C. Kellogg, Decorah, Diagnosis; C. J. Peterson, Dubuque, Why; J. F. Sanborn, Tabor, Histology as a fine art; A. Wood, Iowa City, How can we best promote the development of dentistry; I. P. Wilson, Burlington, Treatment of teeth preparatory to root-filling; R. L. Cochran, Burlington, Are the natural teeth saved at the expense of health and life; A. W. McCandless, Davenport, Nitrous oxide gas and its administration; A. B. Cutler, Osage, A case in practice; E. W. Munn, Dubuque, Amalgam as a filling material; A. H. Thompson, Topeka, Kan., Porcelain settings in the visible surfaces of the anterior teeth; Geo. H. McCausey, Janesville, Wis., The pathology of tumors called epulis; Dr. G. V. Black, of

Jacksonville, Ill., will deliver a special lecture, entitled "Studies of structure of the enamel, with reference to the finishing of the margins preparatory to filling." The executive committee are also making an effort to get Dr. H. S. Chase, of St. Louis, an old pioneer in dentistry in Iowa, to write up the early history of the society and his recollections of practice in the state thirty years ago.

A good deal of dissatisfaction was exhibited in Germany by native dentists when recently the report was circulated that Dr. Sauer, the professor of prosthetic dentistry at the Dental Department of the University of Berlin was about to resign, and when that report was coupled with the statement that Dr. Louis Göttinger, a graduate of the University of Pennsylvania, was to succeed to the vacancy. The dissatisfaction is ostensibly due to the fact that Dr. Göttinger, who is an assistant in the operative department of the University, is unsuited to the prosthetic branch, and while this may be true, there is no question but what the appointment of an American graduate in charge of the prosthetic branch, while another American graduate is in charge of the operative branch, is resented with that instinctive discrimination which, the world over, is directed toward American dentists. It is of no consequence whatever to Americans whether Dr. Göttinger is appointed to the position or not, but the principle involved is one of much importance and should not be lost sight of. The appointing power is in the hands of the Minister of Education and it is certainly flattering that German officials—who, as a rule, discriminate against pork and dentists—should select an American graduate, who, by-the-way, is German by birth, to fill so honorable a position.

It is, perhaps, not well known that at one time dentistry was honored by a prince within its ranks, just as in these days ophthalmologists are honored by Dr. Med. Prince Theodore of Bavaria, who is one of their number. This princely dentist was none less than Peter the Great, Emperor of Russia. He was not such a dentist as the dentist of to-day, but was one of the ablest, as ability was rated in his time—he cured dental diseases radically by extracting the teeth. During his visit to Holland, Peter the Great frequently visited the School of Anatomy of Boerhave, and there studied the dissection of bodies and minor surgical operations. After his return to Russia he took advantage of his knowledge as a dental specialist to the benefit of his court and his subjects. Elevators and dental forceps were continually in his pockets. If any one within his reach was suffering from toothache, or had any diseased teeth, he demonstrated his kindness, and his skill, by extracting the tooth. Indeed, the extraction of teeth became a passion with him to such an extent that he removed the diseased teeth from the mouths of criminals who had been condemned to death, and were about to be executed; or, if there was a scarcity of patients, in the course of a promenade he would enter any private house and order its occupants before him. If diseased teeth were found the victim was seated on the floor, his head placed between the knees of the Czar, who then operated to his heart's content. If the patient indicated his sensibility to pain, he was not chloroformed, as in these days, but the imperial dentist administered a castigation until the patient decided to hold his peace.—*Translated from the Zahn. ärztl. Wochenbl.*

THE DENTAL REVIEW.

VOL. II.

CHICAGO, APRIL 15, 1888.

No. 4.

ORIGINAL COMMUNICATIONS.

FACULTY ADDRESS.*

BY TRUMAN W. BROPHY, M.D., D.D.S., CHICAGO, ILL.

Gentlemen, Graduates of 1888: We have to-day conferred upon you the degree of Doctor of Dental Surgery, and with it bestowed the highest compliment in our power.


The rapid advancement of the Chicago College of Dental Surgery, from its imperfect inception six years ago as an educational institution to the present time, has not only won the confidence and respect of the dental profession throughout the west, but has also brought forth most favorable comment from instructors in older, similar institutions throughout the entire land, as well as from countries abroad. Hence it is pardonable for the faculty, alumni association, students, and citizens of Chicago to speak with full satisfaction of this young and vigorous institution.

At its origin it was a post-graduate school, known under the name of the Collegiate Department of the Chicago Dental Infirmary. Its students were first required to obtain the degree of Doctor of Medicine, or its equivalent, from some college recognized by the Illinois State Board of Health, and to take two courses of lectures with us, before receiving the degree of Doctor of Dental Surgery. We urged such a system of education for dentists, because we believed that dentistry was a department of medicine, and we believed that all dentists should be educated in medicine before they began the study of this specialty.

* Delivered at the sixth annual commencement exercises of the Chicago College of Dental Surgery, March 27, 1888.

We organized under the most favorable auspices that could be desired. Of the seven medical colleges now in Chicago, six were interested with us, each having a member of its faculty on our Board of Directors. The opening lecture was delivered by that scholar, celebrated speaker, and distinguished physician, whose name and fame are co-extensive with the practice of medicine, Dr. N. S. Davis, of Chicago.

During the first session there were three professors and eight lecturers in this institution. The professors taught the principles and practice of dental surgery, operative dentistry, and prothetic dentistry, and the lecturers devoted themselves to dental anatomy, dental pathology, and other special branches not followed minutely in medical colleges. Eighteen students were enrolled for the first course, and at its close we had no candidates for the degree. Two, however, entered the examinations for a special certificate, both of whom failed. The following course eleven names were entered in the matriculation book, and two candidates entered the final examination, and, after successfully passing them, received the degree of Doctor of Dental Surgery. It was in the middle of the second course that a new charter was obtained by us, and the Chicago College of Dental Surgery was organized, to supplant the collegiate department of the Chicago Dental Infirmary. Our reasons for so doing were: 1st, the institution, as first organized, did not receive the large support which was expected of the medical profession; 2nd, the dentists of Chicago and in the northwest could not, or would not, encourage and support a college which required a course of study twice as long as did the older and honored dental colleges of the east. Their students, therefore, came to us, investigated, said they wished to become dentists, not physicians, and moved on to some regular dental college. The medical graduates who came were, in many instances, imbued with the opinion that the knowledge to be acquired, in addition to what they already possessed, was purely mechanical and exceedingly simple. Moreover, we discovered that those who had not engaged in dental study prior to or along with their medical training, attached too little importance to dental science and art. Thus vanished our fondly-cherished hopes of practically teaching dental and oral surgery, and making it a specialty in medicine by conferring the dental degree



only upon those who had first received the degree in medicine. Attractive though the theory was, it was found impracticable, and the education of physicians to become dentists proved, in this instance at least, far short of a success. To say that it is not possible, by careful training in a dental college, to make a skilful, accomplished dentist of a gentleman who has been previously educated in medicine and practiced that profession, would be preposterous. Still, one thus educated would be the better dentist had he begun the study of dentistry first, and have dentistry his life work, constantly before him, instead of carrying in his mind the expectation of engaging in general medical practice.

While a knowledge of the underlying principles of medicine is indispensable to the dentist, he must always study to appropriate these principles to his use as a dentist. A change came. The Board of Directors experienced what our learned pathologist, Prof. Black, would scientifically term a "remoleculization" of ideas. In the beginning it was medicine *first* and practical dentistry *afterward*. Now, as the politicians would say, it is practical dentistry *first, last, and all the time*, accompanied by the teaching of anatomy, chemistry, and physiology, and the principles of medicine and surgery, thereby presenting to the student's mind those branches of knowledge which we regard essential to a well-informed practitioner of dental and oral surgery.

You are advised to pursue a medical course of study, if it be possible to do so, but do not feel that success can not be attained without such a course. You are well fitted for a field of labor, and the law recognizes you as competent to administer remedies and otherwise treat your patients, so far as dental and oral surgery extends. The medical profession also recognizes your ability, and congratulates you on your scientific achievements.

In changing the collegiate department of the Chicago Dental Infirmary and its system to the present more complete method of teaching, we were forced to the belief that "success is the evidence of a want. No man or set of men can build up an institution permanently, unless it is needed. The present age is too intensely practical to long foster that which is useless for its purposes. The want will be satisfied somehow, somewhere, and by someone. That which is not wanted will disappear." While learning collects materials, wisdom applies them to some use;

so in preparation for your life-work, you acquire knowledge, and in your wisdom it is expected you will appropriate it to good use.

The curriculum has been extended so far as to include, in addition to the departments named, general pathology, the principles of surgery and oral surgery, materia medica and therapeutics, general anatomy, general physiology, and organic and inorganic chemistry. Practical anatomy receives the same attention which is given this subject in our best regulated medical colleges.

A complete course in practical work in the chemical laboratory is a requirement for admission to the examinations for the dental degree.

Physiology and histology, didactically taught by the well-equipped professor in that department, is brought to a high grade of practical value in the histological laboratory, and microscopical work is made obligatory.

The Chicago College of Dental Surgery was the first institution of its kind in this country to introduce and use for the benefit of its students, a complete apparatus for the cultivation of microbes, thus demonstrating the agents active in establishing caries of the teeth and effecting their destruction.

This institution is also the first to have organized its junior students in the prothetic department into classes for practical work in dental mechanics, and I may say that this has proved to the students one of the most attractive features of the College, and is unquestionably already one of the most important and valuable branches of the curriculum. In addition to these innovations and improvements in teaching, semi-daily clinics in the college infirmary are conducted by gentlemen who rank high as practitioners, and who have not felt that the interests of the profession and well-being of the people would suffer if they refrain from multiplying our dental colleges. Our senior students are thus given an opportunity to witness the operations of many of the most skilful and successful practitioners. This clinical instruction is carried on systematically, and to an extent unequalled in former years.

The unsurpassed facilities for practical work in the infirmary and laboratories gratify the most enthusiastic dental student, and, together with the other departments of the college, furnish him a field in which to satisfy his most fervent aspirations. If

there be any student in the Chicago College of Dental Surgery who has been unable to occupy his time to repletion, I have yet to discover him.

The spring course of lectures was organized to further the preparation of junior students for the more difficult work of the winter session, and the members of the junior class are now impressed with the fact, if never before, that much of the college work during the session just closed was made easier for those who availed themselves of the opportunity and advantages of attending the spring term.

As Illinois takes rank as the fourth state in the Union, so also does the Chicago College of Dental Surgery stand fourth in the sisterhood of colleges in number of matriculates. "The social law is as inexorable as that of gravitation; moving bodies produce the greatest changes, and the largest ones the greatest attractive force." As an American dentist, I am proud of the position my profession occupies to-day. Not yet having celebrated its semi-centennial anniversary as an organized profession, it numbers in the United States alone about 16,000 practitioners, thirty colleges, in which 503 gentlemen are engaged in teaching, and during the session just closed 1,735 students were in attendance, one-third of which number, by graduating at this season, take their places in the profession.

There are 140 dental societies in the several states, and twenty-three dental journals, which bring to us the thoughts of the best minds of our profession and the dental improvements throughout the entire world.

The high esteem in which American dentists are held in other lands, is not shared by members of other professions of our country. The crowned heads of France, Russia, Italy, Austria, Holland, and Germany have each bowed in recognition of America's superior dental skill, and sought and secured the services of our confrères.

Nor is this all. The teeming millions of earth are indebted to American genius for innumerable mechanical inventions, and for the conversion of chemical elements into indispensable agents for the use of man. A discovery less important to monetary and commercial interests, but pre-eminently the "most beneficent boon ever conferred by science upon the human race," was the

discovery of the inhalation of nitrous oxide and ether as a preventative of pain by an American dentist, Dr. Horace Wells. "The enthusiasm with which the announcement of this marvelous discovery was received, may well be described as unbounded. Wafted across the Atlantic, it was at once hailed with rapturous exultation in England, and speedily adopted in most of the large hospitals throughout the kingdom. It was similarly received in the vast hospitals of Paris, and in the numerous institutions of like character in Germany, including those so celebrated at Berlin." Thus it was the genius of Americans excited the wonder and admiration of the civilized world. Honors innumerable were bestowed upon Fulton, Morse, and other inventors, while the man whose brilliant intellect recognized and successfully applied the elements found in nature to antagonize physical distress, in deadening sensibility in painful operations, was refused even recognition by our own unappreciative government. The French Academy, however, always eager to encourage scientific work and discoveries, has acknowledged, by pecuniary and honorary awards, the indebtedness of mankind to the American discoverer. Although the unthinking American people have permitted his grave to remain unmarked by an acknowledgment of his merit, the achievement of this American dentist should stand foremost in the annals of our professional history. Through him the "fierce extremities of suffering has been steeped in the waters of forgetfulness, and the deepest furrow in the knotted brow of agony has been smoothed forever." And so long as humanity can remain unconscious in the swooning dream born of ether or chloroform while undergoing the most extensive surgical operations, the name of Horace Wells, the genius who first dared to believe that all the sensibilities could be thus deadened, will be remembered and revered.

When the first success in a great contest has been achieved, the victors' hearts beat with joy, and their enthusiasm is unbounded. The buoyant step, the unmistakable expression of delight depicted upon your countenance this afternoon, are in striking contrast with that which might have been observed two weeks ago to-day. Then the great struggle was before you; the possibilities of failure would not vanish; your strength was about to be measured, and a decision rendered on the question as to

whether you had applied yourselves during your course of study with that perseverance and success which would enable you to achieve your aims, and admit you to the ranks of professional gentlemen. To-day the door of the profession is thrown wide open, and you are cordially welcomed to our fraternity. To-day you are transformed from college students and the seats of the lecture-room to full membership in an honorable profession. Each is alike honored and honorable, and, in honoring you, are we not reflecting honor upon ourselves? Your *Alma Mater* looks upon you with that joy which none but a parent knows on beholding a son grown up to full vigorous manhood. Having watched and directed the childhood of your scholastic period as it developed into youth, and now, as we see you at the climax of college life, we share your enthusiasm and rejoice with you in the victory you have won. Joyous and happy as we are on this occasion, in ushering you into professional life, we can not conceal our feelings of deep solicitude for your future.

Passing out of this building to-day, armed with legal evidence of your ability to engage in the practice of the profession of your choice, is it possible that any of your number will so far ignore the instruction imparted by the faculty as to forget himself by joining the ranks of the charlatans? Are we to suffer the humiliation of receiving through the mails, newspaper clippings of flaming advertisements of remarkable methods of practice employed only by Dr. Blank, a graduate of the Chicago College of Dental Surgery? Can it be possible that a member of this class will be so disrespectful to his *Alma Mater*, and become so thoroughly demoralized, as to attach himself to the very lowest element of his profession? The faculty have faith in you. We esteem you highly as gentlemen, and we trust that your deportment, professionally and as gentlemen, will always be honorable, and that the good record made as students may not be impaired by unprofessional conduct.

You have formulated habits of study, and labored faithfully to obtain a knowledge of your profession; see to it that you employ that knowledge to the greatest advantage.

“There are three kinds of men in the world — the ‘Wills,’ the ‘Won’ts,’ and the ‘Can’ts.’ The first effect everything, the ‘Won’ts’ oppose everything, and the ‘Can’ts’ fail in everything.”

You are ambitious to be enrolled among successful dentists. To be successful is "to obtain the object desired, to accomplish what is attempted or intended." What object do you desire? What do you seek to accomplish? Your object should be to acquire knowledge from all sources which will add to your proficiency as professional men; become thoroughly acquainted with, and turn to profitable account, the expressions and opinions of others, so as to aid you more effectually to prevent and alleviate human suffering, and thus promote the happiness of your fellow-men. To be successful in a pecuniary sense is by no means evidence of high professional skill. The most flagrant quack, by means of his marvelous affability and ingenious advertisements, not infrequently acquires wealth, and this dangerous influence, like other vices, may beset you, and must be warded off. The skilful members of our profession soon after entering practice find their services in demand, and their grateful and appreciative patients willingly return a suitable reward, and it is too apparent to require discussion that the latter class are the most successful in every sense, besides commanding that which is far more valuable than wealth — the honor and respect of their fellow practitioners, as well as the community in which they live. It is better for you to be in the mouths of the respected as successful practitioners in your profession, than on the tongue of the thoughtless as an advertised celebrity and with a dollar-a-line reputation.

The man who does not honor his profession soon learns that his profession will neither honor nor respect him. You should find much to stimulate you and excite your pride in the matchless language of Dr. Oliver Wendell Holmes: The dental profession "has established and prolonged the reign of beauty; it has added to the charms of social intercourse, and lent perfection to the accents of eloquence; it has taken from old age its most unwelcome feature, and lengthened enjoyable human life far beyond the limit of the years when the toothless and purblind patriarch might well exclaim, 'I have no pleasure in them.'"

Upon your habits and professional conduct will depend your success or failure. Be faithful in the discharge of your duties, be honorable in your relations with your fellow-men, and be mindful and true to that precept embodied in the Golden Rule. Let the advancement of your profession receive your best

thought, and your own improvement thereby will be inevitable. Have opinions of your own, and do not hesitate to advocate in season such measures as you believe to be right. If you take interest in the cause of religion — and I hope you will — do not leave religion within the church door, but carry it with you, and use it in your transactions with men as practical evidence of your sincerity. Allow those differing from you a respectful hearing, as they may convince you that you are in error. Always hold yourselves ready to part with pet theories, hobbies, and isms when better ways are presented to you for adoption and have been proved superior to yours. It is well not to be too positive, as the coroner said after the inquest upon the body of the man “who died while demonstrating that the gun was not loaded.” If you engage in politics, by all means abandon your profession, for they are incompatible. In this connection it may interest you to know that a member of our junior class has just been elected mayor of the city in which he lives; but this, of course, is an exceptional case.

This day is the commencement of your professional lives. The diploma you have received is but the evidence of a substantial foundation upon which you are to develop a full, rounded professional knowledge. If you feel satisfied with your acquirements and discontinue study, you will recede, not advance, and in a brief period find yourselves far below your present standard. Do not seek positions upon the lowest plane of professional life. nor among mediocrity. Build a tower of knowledge upon the foundation we have helped you lay. Take position in the front rank of your profession.

Remember, you are to meet your fellow-men upon a common level, therefore a thorough knowledge of your profession only will not bring the full measure of success you wish to obtain. Educate yourselves on all important subjects affecting the lives and characters of men; it will make you better citizens, better companions, and enable you the more successfully to combat the forces with which you are about to contend. Give no thought to the statement you have perhaps often heard, that “the profession is overcrowded;” it always comes from a man who would make a failure in any pursuit in life. Did it ever occur to you that half a million of people annually come to the United States

to make permanent homes, and that foreign dentists are seldom included in that number? When we add to this number the natural increase in our population, we realize that the members of our profession are not by any means in excess of, nor indeed are they equal to, the number required. The practitioner who, when a student, felt it unnecessary for *him* to do practical work in the chemical and physiological laboratories and anatomical room, is usually of the opinion the profession is too full. The dentist whose engagements keep him out late at night, and whose eyes on the following morning exhibit evidence of a struggle, and whose breath is musty, is generally of the opinion that the profession is too full. The dentist whose appointments are often broken in consequence of pressing outside business (at the race-course, ball-park, or billiard-room), soon grows into the belief that the profession is overcrowded.

You will no longer be guided and instructed by your professors; you must now guide and instruct others. No profession furnishes a broader field for imparting information than yours, as a vast majority of well-informed people on other subjects are very deficient in dental knowledge. Pursue your studies with energy; note carefully your cases of extraordinary interest, and publish them for the benefit of the profession. Be honest when you write, and do not fail to use quotation marks where they belong.

There are many unsolved problems before our profession, and you may vie with others for the honors to be bestowed upon those who effect their solution. Do not neglect your practice. The man who neglects his business soon finds he has no business to neglect. Be energetic and zealous in your work, and strive to excel.

To-morrow the shrill whistle of the locomotive will be a signal of your departure from the scenes of your recent activity, and as you enter the field of your professional labors you carry with you the earnest wishes of your *Alma Mater* for your success. Your capital consists of intelligence, energy, and skill. If properly employed, it will place you in a position where your success will be assured.

In behalf of the college, I bid you and each of you God-speed.

THE ETIOLOGY OF DENTAL CARIES.*

BY C. N. JOHNSON, L.D.S., D.D.S.

In treating on any scientific subject, the writer must either be an original investigator himself, or else he must rely solely on the investigations of others upon which to base his theories. Unfortunately for your society, I belong to the latter class. I have never made any original investigation regarding the etiology of dental caries. The most, then, that I can hope to do is to formulate as best I may the theories of others, and possibly, by drawing conclusions from those theories, I may lead to a general discussion of the subject that will prove profitable to the society.

Primarily, then, we may say that there are two general causes of dental caries—a predisposing and an exciting cause. By predisposing cause we mean some inherent defect in the tooth structure due to defective development, or some condition of the teeth or surrounding parts other than the normal, such as irregularity, etc., whereby the tooth is rendered susceptible to the attack of agents causing decay. By exciting cause we mean some agent which, after the tooth has been predisposed to caries, acts on it to bring about decay. The exciting cause is the active agent in caries. Thus we see that a tooth which possibly may not be perfect in its development will remain in the mouth free from caries, if the exciting cause be kept away from it. This has led to a close search for the active agent in decay, and it is to the consideration of this phase of the subject that the present paper is devoted.

The first intelligent theory advanced as to the cause of dental caries was published some few years prior to 1835. At the latter date Wm. Robertson wrote on the subject, but before his time Fox and Bell had published their theory, which was that caries resulted from inflammation. Fox claimed that decay was induced by inflammation of the lining membrane of the pulp cavity. Bell thought that the inflammation began in the membrane between the dentine and enamel. Robertson claimed that the cause of decay came from the outside, that the progress of the disease was from without inward, and that the tooth remained perfectly passive under it.

* Read before the "Odontographic Society" of Chicago on Monday, March 12, 1888.

We have to this day the two factions regarding the cause of caries. The inflammation theory is championed by such gentlemen as Drs. Abbott and Heitzmann, of New York; while the theory that caries is caused by some external agent has advocates among the learned men on both sides of the ocean. This latter theory must, I think, in the light of recent investigation, be eventually admitted as the only satisfactory theory.

From the time of Robertson to within a very few years ago, the profession had made no real progress in the way of solving the problem. He told us that the cause came from an external source, and that the vital action of the tooth had nothing to do with the process of decay, but he did not tell us what the agent acting on the tooth from without was. Dr. Watt advocated the theory that the mineral acids were the active agents causing caries, and divided the decay into three classes: 1st, the white decay, caused by nitric acid; 2nd, yellowish decay, caused by hydrochloric acid; and 3d, the black decay, caused by sulphuric acid. The mineral acid theory, however, has been practically disproved, from the fact that by treating dentine with any of the mineral acids, of the strength with which they may be found in the mouth, the walls of the dental tubuli are not destroyed. The contents only of the tubuli are dissolved out. Now, in true dental caries we find the walls in many places completely broken down, so that there is nothing analogous in the two processes. Nor are we to believe, according to Dr. Black, that the color of the decay is in any way associated with the carious process. All decay is white in its primary condition, and the color is modified after the decay has taken place.

Up to the time of Dr. Miller's investigations we had no satisfactory proof as to what the active agent in dental caries might be. Dr. Miller instituted a different process of investigation from any of his predecessors. They had been studying mostly by analysis. They had been picking carious dentine apart and analyzing it, to find out what had produced it. They had been searching in the mouth for agents which might be considered capable of bringing about decay. Dr. Miller began work on the synthetical plan. He produced caries artificially. He, by the use of chemical agents, brought about decay that could not be distinguished in any particular from caries that had occurred in the

mouth. The agent that he found would invariably produce decay similar to natural caries, was lactic acid. The next step, then, was to account for the presence of lactic acid in the mouth. To do this we must go back a little, and consider some of the conditions of life as manifested in the entire animal and vegetable world.

Every living cell, whether animal or vegetable, must support its life and material structure by the appropriation and remoleculization of matter within itself, and as a result of this remoleculization we have waste products formed. For instance, the result of remoleculization in the material body of man is a waste product called urea. Different organisms excrete different waste products, and so we find that there is a family of micro-organisms whose waste product is lactic acid. This micro-organism is found abundantly in the mouth, and two varieties especially are almost uniformly present in carious cavities. The names of these two are *streptococcus media* and *streptococcus parvus*. Here, then, we think we have very conclusive evidence as to what the cause of dental caries really is. We find, first of all, that we can produce caries with a certain acid; we then find that certain micro-organisms produce this identical acid as their waste product; further on we discover these micro-organisms existing abundantly in the mouth, and especially in carious cavities; and last of all, we can take a perfectly sterilized culture-fluid, and by placing a small portion of carious dentine in it we can grow these micro-organisms in abundance, and they will produce there, in that previously neutral culture-fluid, this very lactic acid that we have found will cause decay.

The micro-organism theory of decay has been held in disrepute by many otherwise able thinkers, from the fact that at one time the theory was strenuously advanced that micro-organisms brought about decay by a process of burrowing into the dense structure of the tooth, that they literally ate the tooth up, and used its substance for their own food material. This manifestly absurd idea went forth at one time as the micro-organism theory of decay, and it is little wonder that the name micro-organism was thereby rendered a synonym for everything ridiculous. However, it is now well understood that decay is not caused by

the body of the micro-organism, but by its waste product, which acts as a digestive body to dissolve the tooth structure.

The advocates of the inflammation theory ask us why it is that decay does not go on under a filling when we leave partially decalcified dentine, containing micro-organisms, in the bottom of a cavity. They claim that if caries is caused by the micro-organisms, decay will necessarily go on under a filling when they are present; but they forget the fact that micro-organisms require food to maintain their life the same as higher organisms. Now, this food-material, upon which the micro-organism of decay exists, comes from the outside. It does not receive a particle of its support from the tooth structure. It requires starch or sugar for its maintenance, and as soon as the supply of starch or sugar is cut off the micro-organism necessarily dies or becomes inert. With a far better show of logic we may ask them why it is, if dental caries is an inflammatory process, that we find it progressing the same in the dentine of a pulpless tooth that we do in a tooth where the pulp is alive? This question has never been satisfactorily answered by the advocates of the inflammation theory. On the hypothesis of the micro-organism theory we can easily understand that the vitality of the tooth has nothing of importance to do with the carious process, that the waste product of the micro-organism, viz: lactic acid, will dissolve away dentine, in a tooth where the pulp has been destroyed in exactly the same manner, and to the same extent, that it will in a tooth where the pulp is alive. If we found that upon the death of the pulp there was a check to the process; if we could discover any marked change in the progress of the disease at this point, then we might look to some vital process connected with the circulation for a solution of the phenomena presented. But when we see decay going on, day by day, with the same regularity after as before the death of the pulp; when we see the process undisturbed in any way by the suspension of the circulation as carried on in the dentine, through the medium of the pulp, then we are naturally forced into the conviction that the active agent in decay comes from an external source, and that the tooth, so far at least as causative principles are concerned, remains passive under it.

The only plausible theory advanced from the inflammation standpoint as to decay in a pulpless tooth, takes its origin in the

fact that there is a circulation from the peridental membrane through the cementum, even after the pulp is dead. This is an exceedingly slender thread upon which to hang a theory. We all know that there is a very limited communication between the peridental membrane and the dentine of the root, if indeed any at all, and to claim that the dentine in the crown of the tooth receives, from the peridental membrane surrounding the root, a sufficient circulation to admit of inflammatory action, amounting to destruction of the tissue, is preposterous.

We may now possibly consider with profit for a few minutes some of the phases of the micro-organism theory :

We have said that the waste product of the micro-organism is the active agent in causing decay. Now we find that waste-products are almost uniformly poisonous, especially to the organism that excretes them. For instance, if the waste-product of any organism be retained within the organism the result will be the death of that organism. The waste-product of man, urea, remaining in man will cause the death of the man ; and on this hypothesis the theory might be advanced that the micro-organism producing lactic acid would die in its own excrement, and thus limit its action. If there were no mitigating circumstances, the organism would simply produce enough lactic acid to cause its own death in the cavity, and that would end the decay. But we find in the cultivation of this micro-organism that if lime be added, the lactate of lime is formed, and that is not a poison to the organism. The lactate of lime eliminates the poisonous material which destroys the plant, and gives it an opportunity of working away and producing lactic acid incessantly. In the process of dental caries the tooth supplies the lime, and so long as the organism is fed with starch or sugar from without there is nothing to interfere with its continuous action on the tooth.

The reason why some people are troubled with caries, and others, with teeth apparently no better developed, are not, while all are exposed to the same conditions, is explained in the following way by Dr. Black : " The fluids of the body are made up of many chemical compounds of which we know but little. In some mouths the fluids are not conducive to the life of the micro-organism causing dental caries, while in others they are ; and thus we find in two mouths such a difference in the liability to decay. On this

hypothesis we can account for hereditary dental caries. The idiosyncrasy favorable to the propagation of the streptococci family may be transmitted from one generation to another." Here, then we have a theory which accounts for many of the phenomena that have puzzled us all in practice. It accounts for the fact that where we have two patients with teeth seemingly alike in quality, and where equal care is taken by each, the one is vigorously attacked by dental caries, while the other is comparatively free from it. It also shows us why it is that an individual's teeth may remain for years free from decay, and all at once, without any apparent cause, yield to an attack which threatens to undermine the whole denture. It shows us why a person may be in perfect physical condition in every other respect, and yet have decay of the teeth. It explains many of these remarkable circumstances which can not be satisfactorily accounted for in any other way.

And moreover, I may say that upon this very theory do we base the future hope of dentistry. When it is recognized that there are certain conditions of the mouth that are not conducive to the development of the micro-organism causing decay, can we not hope, in view of a future and a better knowledge, to bring about these conditions, so as to put a check upon the progress of the disease? Must it be considered utopian to believe that, when science has touched the dark places in our professional knowledge, and brought to bear upon them the purer light of a grander day, we may employ prophylactics instead of remedies, that we may prevent decay instead of treat it; that we may hope, by attention to the patient from infancy up to old age, to preclude the possibility of suffering from that disease which Burns has so aptly called the "hell o' all diseases"?

In conclusion, gentlemen, let us ponder well on the possibilities presented us by the germ theory of disease as it relates to dentistry, and let us not stop this side of a scientific knowledge which will enable us to employ preventatives in the treatment of dental caries. To this society, young in organization, buoyant in hope, fresh in the vigor of a true professional spirit, there is no other possibility of so weighty importance as the accomplishment of aims directed in the tendency to which I have alluded; and let me say to you here to-night that the genius who evolves from

the mighty labyrinth of the chemical world, that potent factor which shall act as a check upon this disease, shall win for himself, not alone the love of his brothers, not alone professional renown, but, what is better yet, the lasting homage of a long-suffering humanity.

PUT YOURSELF IN HIS PLACE.

BY W. A. SPAULDING, D.D.S., MINNEAPOLIS, MINN.

How often are we called upon to examine a mouth, to see in what condition the teeth are! Not being informed that the object is to criticise some other operation, either recently performed or of long standing, the patient wishes to know if this or that is all right, and how much such and such work would cost, etc.

We may find in the mouth some work we could criticise. It may have come from some eminent practitioner, who has had years of experience and advantage, and from whom we would look for perfection, if it were possible; or it may come from a beginner, a young practitioner who has but just launched out into the great sea of usefulness, and withal hard work. It is brought to us by all classes and in all ways.

There are comparatively few mouths in which we can not find something that is not perfect. We see a cavity in a tooth; all the rest may possibly be in good order. We are told by the patient that Dr. So-and-so filled that tooth a week, a month, or perhaps a year since, and here it has all come out; when, in fact, it may all be true, but he or she does not tell you why the filling did not remain. They leave the matter in your hands to deal with it as you will. They do not tell you that Dr. So-and-so advised a different class of work from what they were willing to have done. It might be for various reasons, personal endurance, physical or mental disability, perhaps a nervous child who would not submit to thorough work, or it may be from abuse or negligence on part of the patient, or perhaps they are entirely mistaken about its ever being filled. With all this you are left in the dark. Dr. So-and-so filled the tooth, and the filling has come out. How natural it is for us to condemn the work at once, with-

out saying very much. Simply allow the patient to do the talking, and we acquiesce by remaining quiet. Would we not be acting decidedly wrong toward our neighbor? Would we be doing as we would wish to be done by? How much more that patient would think of you if you proved to him his error, and convinced him of the liability of the teeth to fail, for they are in his care and subject to his abuses, and are only "patched up nature" at best, and without care on his part he could not expect you to be more perfect.

As to estimating the cost of work, I think we should be very guarded about stating a fixed price until it is completed, or so nearly completed that we may be enabled to fully comprehend all our services. No operator can tell exactly where the decay in a tooth is going to lead him, or what obstacles he is liable to meet with, until he has completed the preparation of the cavity. The tooth may be of a frail, brittle nature, and crumble away much more than we would have calculated; or we may find an exposed or dead pulp which we had not expected, all of which would vary the price of the operation.

No dentist should set a price upon a piece of work already completed by another, for no one can measure the amount of labor necessary to complete that work, unless he has stood by and seen the operation from the commencement to the termination.

STEEL, ITS HISTORY AND USES.*

BY DR. C. F. HARTT, OF CHICAGO.

I find, upon investigation, that the subject which your committee has assigned to me, "Steel, its History and Uses," is so vast that it would require several volumes to do justice to the same, and in consequence, I shall confine myself to but one kind of steel; passing over the so-called Bessemer steels, which have come into use since 1855, which, by the way, should be called Mushets steel rather than Bessemer.

The steel which we will speak of this evening is the kind which was used by the early Greeks, and may have possibly been known in Egypt, though this is very doubtful; one thing however

*Read before the Chicago Dental Society, April 3, 1888.

is certain, the old Romans were well up in the manufacture of steel.

In a number of instances bodies which are capable of undergoing ignition, are rendered hard and brittle by sudden cooling. Glass, cast-iron, and steel are the most remarkably affected by this circumstance, the inconveniences arising from which are obviated by cooling them very gradually; and this process is called annealing.

Steel is most effectually annealed by making it red hot in a charcoal fire, which must completely cover it, and it should be allowed to go out of its own accord.

Steel is made of the purest malleable iron, by a process called cementation. In this operation layers of bars of malleable iron, and layers of charcoal are placed one upon another in a proper furnace, the air is excluded, the fire raised to a proper degree of intensity, and kept up for 8 or 10 days; if, upon the trial of a bar, the whole substance is converted into steel, the fire is extinguished, and the whole is left to cool for 6 or 8 days.

Iron thus prepared is called blistered steel, from the blisters which appear on its surface.

Duame found an advantage in using from one-fourth to one-third of wood ashes, especially when the iron was not of so good a quality as to afford steel possessing tenacity of body, as well as hardness; these ashes prevent the steel-making process from being effected so rapidly as it would otherwise be, and gives to the steel pliability without diminishing its hardness.

The blisters on the surface of the steel under this management, are smaller and more numerous. He also found that if the bars, when they are put into the furnace, be sprinkled with sea salt, this ingredient contributes to give body to the steel.

If the cementation be continued too long, the steel becomes porous, brittle, of a darker fracture, more fusible, and capable of being welded.

On the other hand, steel cemented with earthy infusible powders, is gradually reduced to the state of forged iron again. Excessive or repeated heating is attended with the same effect.

The properties of iron are remarkably changed by cementation, it acquires a small addition to its weight, which consists of the carbon it has absorbed from the charcoal, and amounts to about

the hundred and fiftieth or two hundredth part. It is much more brittle and fusible than before, and it may still be welded like bar-iron, if it has not been fused or over cemented; but by far the most important alteration in its properties is that it can be hardened or softened at pleasure. If it be made red hot and instantly cooled, it attains a degree of hardness which is sufficient to cut almost any other substance, but if heated and cooled gradually, it becomes nearly as soft as pure iron.

A rod of good steel in its hardest state possesses so little tenacity, that it may be broken almost as easily as a rod of glass of the same dimensions. This brittleness can only be diminished by diminishing its hardness; and in the proper management of this point for different purposes consists the art of tempering.

The colors which necessarily appear on the surface of the steel, slowly heated, are yellowish-white, yellow, or straw color, gold, brown, purple, violet, and deep blue. These signs direct the artist in reducing the hardness of steel to any particular standard, and when the desired color is reached the piece should instantly be plunged into cold water.

The yellowish-white indicates a temper so little reduced as to be used for edge tools; the yellow or straw color, the gold color, and the brown are used for razors, pen-knives, excavators, etc.; the purple, for tools used in working upon metals; the violet, for springs, clamps, matrices, etc.; but if the last blue be waited for, the hardness will scarcely exceed that of iron.

When soft steel is heated to any of these colors and then plunged into water, it does not acquire nearly so great a degree of hardness as if previously made quite hard and then reduced by tempering. The degree of ignition required to harden steel is red heat. The texture of steel is rendered uniform by fusion. The tenacity of steel hammered at a lower heat, or even when cold, is considerably increased.

Various methods of hardening steel are resorted to, such as dipping in oil, tallow, and salt water; but when steel is required to possess the greatest degree of hardness, it may be plunged into mercury, which will render it so hard as to cut glass like a diamond.

The surest method for selecting steel for edge tools, is to have one end of the bar drawn out under a low heat, such as an

obscure red, and then to plunge it suddenly at this heat into pure cold water. If it prove hard and requires a great force to break it, whatever its fracture may be it is good, the excellence of steel being always proportionate to the degree of its tenacity in its hard state.

In general a neat curved line fracture, and even gray texture, denote good steel, and the appearance of threads, cracks, or brilliant specks is a proof of the contrary. If diluted nitrous acid be applied to the surface of steel previously brightened, it immediately produces a black spot; but if applied to iron in like manner, the metal remains clear. By this means it will be easy to select such pieces of iron or steel as possess the greatest degree of uniformity, as the smallest vein of either upon the surface will be distinguished by its peculiar sign. There are quite a number of methods by which steel may be manufactured, tempered, and annealed. At the present day very little attention is paid to the colors which appear on the surface of the steel, as metal baths of a known degree of heat are now used; also, small and sharp-pointed instruments are best tempered or annealed by first enveloping them in a box of platinum, or some other metal or earthy covering which will prevent burning and scaling, which would otherwise occur if allowed to come in contact with the air; and if the dentist will bear in mind a few of the simple facts herein stated, he may expect to meet with a reasonable amount of success when doing amateur work in his own laboratory.

IOWA STATE DENTAL SOCIETY.

We hope that as many of our readers as possible will turn out at the next meeting of the above society, which will be convened at Iowa City, the first day of May, 1888.

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“THE PROFESSION IS OVERCROWDED.”

Apropos of this expression, now so frequently resorted to when speaking of the condition of the dental profession, an address recently delivered before the graduating class of the Chicago College of Dental Surgery (*vide* page 165 of this number of the REVIEW) contains some terse and appropriate remarks on this question. It is certain that the supply, as yet, does not equal the demand; provided, however, that the people advance in education pertaining to the dental organs in the same ratio as in other departments of education. The furtherance of this object—the education of the people on topics pertaining to the teeth—is one of the important duties of those who now enter the profession, and who are supposed to overcrowd its ranks.

It is said that the negroes in this country have multiplied eight times in a century. As there are 7,000,000 now, there will be 192,000,000 in 1980, less than a century hence. The whites in ten years, by birth and immigration, have increased 30 per cent. Presuming that the same ratio will be maintained—and there is no reason to presume otherwise—in 1988 there will be 800,000,000 whites and 200,000,000 negroes in the United States. With anything and everything that may be done to lessen the possibilities of decay, three generations will not diminish to any appreciable extent the amount of dental service required by every man, woman, and child; hence in 100 years from now there will be sufficient dentists needed to supply 1,000,000,000 people with

dental services. Taking the number of dentists now in the United States — 16,000 — and computing the ratio of increase to the ranks which has prevailed during the last five years (being the most marked period in this respect in the history of dentistry), in 1988 there will have been conferred the degree of Doctor of Dental Surgery on nearly 580,000, of whom 400,000 will be living and practicing dentistry. To-day, with a majority of the people not availing themselves of the benefits of dentistry, there is one dentist to every 4,000 of the population, and 100 years hence there will be one dentist to every 2,500, provided the increase in the profession keeps pace with the increase of the people. Presuming that 100 years from now, by education the people will require twice the amount of service that they do to-day — not an unreasonable supposition — and that this increased demand be diminished entirely by prophylaxis and by the preventive measures of the dentist — there would still be but one dentist to every 2,500 of population, surely not an excessive number. The fees paid for professional services will be regulated entirely by the conduct of those within the ranks of the profession, and will be commensurate with the price of labor, the conditions of commerce, finance, and the general prosperity of the country.

ONCE A D.D.S. ALWAYS A D.D.S.

The exact point of duration to which a degree conferred by a private educational institution invests with authority, power, and privilege, is one of such exact nicety as to be determined with difficulty. Is a man once a D.D.S. always a D.D.S.? In our own country it has not been customary to deprive any person of privileges or powers which are exercised by an authority wielded by the functions of the brain. In other words, educational powers are seldom abrogated, no matter what course in life the individual choose to follow. The M.D. remains a Doctor of Medicine, whether he be a drunkard, a felon, or a prince. This is not true of honors conferred anywhere, but especially abroad, for an honor may be entirely recalled, annulled, or temporarily suspended, at the option of the investing body, from whose action there is no appeal. Why can not this power be extended to institutions conferring degrees for merit and learning? Why should

a member of a class of graduates, or an alumnus of a college, be permitted to debauch and degrade the fair name and fame of his class-mates or his *Alma Mater*? In the medical profession there have been instances where criminal malpractice was charged, and graduates were deprived of their degree by the college which conferred it; licenses have been cancelled, and names struck from the list of practitioners of the state in which they practiced. Could not this power be vested in our dental colleges, as a matter influencing the elevation of the profession? No one who has acquired the necessary knowledge to practice dentistry should be deprived of that right and privilege, but neither should any one receive the degree of Doctor of Dental Surgery who is not willing to accept the diploma if the usual closing sentence, " * * * with all the rights, emoluments, and privileges thereunto pertaining," is followed by the following: "The privileges herein conferred to be in full force only during good behavior, at any time to be annulled or suspended, at the option of the governing faculty."

WHAT NEXT ?

The waves of the dental ocean have whirled and danced, risen and fallen, assumed at times the appearance of turbulence, only in turn to become placid and peaceful, as one theory after another has been launched upon it during the past five years. Dogma after dogma has found its expostulants, theory upon theory its champions, practice and method its advocates and enthusiasts. "Craze" and "fad" one after the other, in rapid succession have seen their day, and, while there is nothing entirely new, no one can gainsay but that the profession has benefitted largely by this unusual activity.

Of histological studies and theories, the periosteum, enamel and the development of the teeth, have received especial consideration. Micrology has perhaps received the most marked attention of any science, and the additions to our store of knowledge has been increased in this field perhaps more than in any other. Implantation has found its advocates, and fortunately the enthusiasm accompanying most novelties, has, from the nature of the operation, prevented any extensive abuse of this useful and suc-

cessful method of replacing lost natural teeth. Bridge and crown work have both received much attention. The former, somewhat hampered by patent claimants, has not received that liberal and meritorious notice generally bestowed on everything calculated to benefit humanity, and hence can not be fully and impartially judged. A catalogue of all the various devices which come under the classification of crowns, would be voluminous and interesting, but after all, crown work has been sifted down to two classes of crowns, viz., all porcelain crowns, with strong pins and gold collar or cap, for the anterior six, eight or ten teeth, and gold caps for all posterior teeth. A great deal of beautiful work has been exhibited, which is produced at the cost of much labor; artistic combinations of gold and porcelain have produced delicate and intricate contrivances, classed as artificial crowns, but after all, the rule holds good, that the fewer the elements composing the tooth and pin, and the fewer the parts required to construct it, and the sooner they can be brought together, the better it is.

Copper amalgam, recently brought to the prominent notice of the profession in America, and of which quantities have been placed on the market, deserves careful attention. There is still much which we do not understand about it, and its indiscriminate use should be guarded against.

Instead of "springing new things" on the profession, it now behooves us to well investigate those to which our attention has been called, and incidentally, it may be said, that the army of graduates now entering the profession should each and every one select one or more of the subjects engrossing the attention of the profession, and devote time and ability to it. Clear up doubtful points, elucidate obscure ones, and call the attention of the profession to those entirely overlooked, or not even approximately understood.

THE MICHIGAN STATE DENTAL ASSOCIATION.

The thirty-third annual meeting of this society was held at Ann Arbor, March 20 and the two days following. The pride which every resident of the state feels for the university, and the

great interest which its dentists take in the dental department in particular, has made Ann Arbor the meeting place for many years past. The attendance was about ninety, including visitors from neighboring states. The students swelled the audiences at each session.

A well arranged programme was but imperfectly carried out, and the meeting adjourned after three days work, instead of four as announced.

The most prominent feature of this meeting, perhaps, was in its riddance of a member who had unrepentently and persistently violated its code of ethics. This was a commendable sanitary measure, which gives assurance that the society is permeated with a sentiment entirely in keeping with the spirit which created and watches over a college of such high rank as the Dental Department of the University of Michigan. The REVIEW joins all high minded dentists in applauding this and similar acts.

There is an opportunity for this society. Its usefulness in late years has not been adequate to the requirements of a state so important in intellectual culture and commercial resources. The management of the society has now been placed with its bright and energetic young blood. They can and will lift it to a higher plane of usefulness. They will take care that a larger number and more carefully prepared papers are presented, and that they will not be permitted to pass without discussion, that clinics are properly given and supervised, and, above all, that the transactions shall be promptly published.

DENTISTS AND THE AMERICAN MEDICAL ASSOCIATION.

The Mississippi Valley Association of Dental Surgeons appointed delegates to the meeting of the American Medical Association, which will meet in May next at Cincinnati. As the above association is not a medical society, and is not working under the code of medical ethics, which governs the members of the A. M. A., we do not see how they can be admitted to membership.

The resolutions passed last year in Chicago said "that the regular graduates of such dental and oral schools and colleges as require of their students a standard of preliminary or general

education, and a term of professional study equal to the best class of the medical colleges of this country, and embrace in their curriculum all the fundamental branches of medicine, differing chiefly by substituting practical and clinical instruction in dental and oral medicine and surgery in place of practical and clinical instruction in general medicine and surgery, be recognized as members of the regular profession of medicine, and eligible to membership in this association on the same conditions and subject to the same regulations as other members."

There can be little doubt as to the meaning of this resolution. Membership in the A. M. A. is provided for in three ways: 1st, being a regularly appointed delegate by a *medical* society working under the code of ethics; 2d, certificate signed by the president and secretary of a medical society in affiliation with the A. M. A. that the possessor is in good standing in the society; 3d, member by invitation for one year, on being introduced by the presiding officer at a general meeting of the whole association. (This is really not membership, but simply a courtesy offered to respectable visitors, who are vouched for by a member of the A. M. A. They may or may not be doctors of medicine.) The standard of the best medical schools of this country, according to the Illinois State Board of Health, is three years of study, a preliminary examination before entering the medical school which must be satisfactory to the examining committee, attendance on two or more full-winter courses of instruction, attendance on two terms of hospital instruction, practical work in anatomy, chemistry, histology, and analysis of urine. How many dental colleges in the United States at this time require three years of study prior to the candidate coming up for graduation? There are thirty institutions engaged in the teaching of dentistry in the United States; and eleven of them advertise that they require three years of study. The remaining nineteen are in the two year list. At this rate the graduates of the eleven schools only are eligible to membership in medical societies, unless the graduates from the two-year schools are also possessors of the M.D. degree, when of course they are eligible to membership in regular medical societies. All dentists of eclectic or homœopathic proclivities are debarred from membership, on account of their peculiar tenets, unless they are renounced. We are not opposed to dentists

becoming members of medical societies or the American Medical Association, but we think the members of the Mississippi Valley Association of Dental Surgeons appointed delegates to the A. M. A. without due deliberation, and that they need not be surprised if their credentials are rejected.

DOMESTIC CORRESPONDENCE.

INCORRECT FORMULÆ IN TEXT-BOOKS.

To the Editor of the Dental Review :

DEAR SIR — In the July number of your journal for last year you will find a short note questioning the correctness of some prescriptions found in "Gorgas' Dental Medicine." This, of course, is one of our recognized text-books, and I must say has proved immensely valuable to me as a work of reference, and no doubt has assisted others out of dilemmas. Anything, therefore, found in its pages which is questionable, should be held up for discussion and (if necessary) correction, that the young of our profession may not be led into error. I therefore would beg indulgence in drawing attention to Prof. Gorgas' formula for making a 4 % solution of hydrochlorate of cocaine, which he gives as follows in "Dental Medicine": Cocaine hydrochloratis (cryst.), gr. x; aqua distillatæ, f. 3 1.

You are doubtless aware that in some of our societies local anæsthesia has been a very prominent topic, and of course in this connection the different salts of this alkaloid have received considerable attention. In fact so much has been said and so many have been led to experimentation with cocaine, that the market has been very notably affected, and the price correspondingly advanced. But, asking pardon for this digression, I will revert to my topic. On the same page of the above-mentioned work the author gives as a formula for a 5 % oleate, gr. $2\frac{1}{2}$ to m. lx, showing that the error in the former prescription, though patent, was accidental. It is a little singular, however, that two authors should fall into the same error; but such seems to be the case, for on page 180 of Prof. Clifford Mitchell's "Dental Chemistry" we find the following words: "Ten grains of the hydrochlorate

in one fluid drachm of water make a four per cent. solution." There are, however, we know, many in our ranks who rely upon the text-books, and who might, in the hurry of business, take a prescription from some one of them without stopping to make a calculation, or perhaps feeling confident that anything found in its pages has passed through the mill of criticism and must be correct. Also, we are having new blood infused into our body every year from our collegiate mills, and they possibly may be led to prescribe anything found in these books, believing that they have the authority of the profession for so doing. I have called the attention of several practitioners to these errors, and none had noticed them in their readings, and believing that the shortest and surest way to reach the ears of both student and practitioner was through the medium of your excellent journal, I offer this as my apology for intruding upon your space.

The pharmacopœia of the United States gives the weight of distilled water as 56.96+ gr. per fluid drachm, consequently a 4 % solution would be a little over $2\frac{1}{4}$ grs., to fl. 3 i. On page 305 of "Dental Medicine" Prof. Gorgas also gives the dose of H_2O_2 as gr. iij to gr. v. How does he get this medicine into a solid form? In Phillips' "Materia Medica" the dose of the aqueous solution (10 vol.) is given as 1 to 4 fl. 3 freely diluted, ethereal solution $\frac{1}{2}$ to 2 fl. 3. More anon. Yours respectfully.

E. L. CLIFFORD, D.D.S.

Chicago, March 30, 1888.

CAUTION—ERYTHROPHLÆUM JUDICALE.

To the Editor of the Dental Review:

DEAR SIR—In the REVIEW of March I have read a long notice of the active principles obtained from the bark of this tree, and as this notice is likely to lead to the trial of it by dentists, a word of caution may not be out of place. Erythrophaleine is a very dangerous cardiac poison, and besides, in the strength recommended by Lewin, about one part in 500 of water, it is without any perceptible effect upon the teeth, and stronger solutions should not be used without the tooth to be treated can be isolated by the rubber coffer dam. This drug, like cocaine, is of no special value in diminishing sensibility in the teeth.

Boston, March 23, 1888. WILLIAM HERBERT ROLLINS.

REVIEWS AND ABSTRACTS.

TRANSACTIONS OF THE AMERICAN DENTAL ASSOCIATION.—
Twenty-seventh Annual Session; 1887.

This volume is a creditable addition to the list. It contains 172 pages, 33 relating to matters of business, 139 to papers and discussions.

The literary execution of the work is excellent, as would be expected from a committee having for its chairman the painstaking secretary of the association, who, by the way, has entered on his tenth year of consecutive work. Apparently the only thing lacking in the committee's work is an alphabetical index, something which the writer thinks should never be omitted from such a publication, valuable as it is, chiefly, for reference.

The printing, as in previous years, has been done by the S. S. White Co., and, as usual, in excellent style.

A peculiar combination of circumstances seriously hindered the work of the officers in forming and carrying out a programme for the meeting of '87. Up to a time within a few weeks of that appointed for the meeting it was by no means certain there would be a meeting at all. First, the association had adjourned in '86 to meet at Asheville, N. C. So late as June 11th, '87, the Corresponding Secretary was authorized to announce a change of place of meeting to Niagara Falls. This notice could not be published till July, a little more than a month before the time appointed.

At the same time a determined effort was made to have the meeting deferred to another year. Some of the leading members of the association, including the president, were actively interested in the dental section of the International Medical Congress, almost immediately forthcoming at Washington. This so absorbed their attention as to make them willing to set aside for the year the work of the A. D. A.

But when the proposition reached the members there came from many quarters a vigorous protest. A vote of the officers gave only three in favor of to twelve against postponement.

Moreover, the President went so far as to submit the question to a legal test. The Hon. Judge Trumbull [was consulted, and

gave a written opinion to the effect that by the constitution of the society an annual meeting could not be dispensed with.

This final decision of the matter left the executive committee but a few weeks, in a hot midsummer, to prepare a programme.

The result, however, was a three days' session, with sixty-six members present, and reports, more or less complete, were had from all sections.

The Treasurer's report indicates a prosperous condition of the association financially, there being a balance on hand of \$2,829.64. In the preceding year \$255.76 had been paid to assist in the work of original investigations, and at this meeting the further sum of \$200 was voted to Dr. Miller of Berlin, for the prize essay of 1886.

The address of the President, Dr. Allport, is one of considerable length, occupying fifteen pages of the published report. Probably the Doctor had in mind the reasonable probability of a dearth of papers, and so determined to do his full part in supplying matter for thought and discussion. At any rate, he presented an interesting paper on "The History, Power and Usefulness of Associated Effort in Scientific Work, in Reference to the Advancement of the Art and Science of Dentistry." The main part of the address gives an epitome of the matters foreshadowed by the text; the concluding portion, however, deviates somewhat to express the writer's well-known views on the relations of medicine and dentistry.

The address, as a whole, will be appreciated by many readers, and a portion of the closing paragraph is hereto annexed: "As handicraft—manipulative skill—has well nigh reached its limits in dentistry, upon the more thorough and appropriate medical education of those who may hereafter enter upon the practice of dentistry must its advancement and greater usefulness mainly depend."

The section on dental education, literature and nomenclature presented a report in two parts, one by the Secretary, Dr. Ottofy, and one by the President, Dr. Atkinson. To these were added a short paper by Dr. Crouse, on Kindergarten work and Manual training schools as primary adjuncts to the education of the operator.

Lack of space forbids an extended review of the Secretary's

report. Suffice it to say it was one of the best ever presented by the section, and the most complete given by any one at this meeting. It will well repay perusal by any and all to whom it is accessible.

The paper on *nomenclature*, by the President, is itself hard to name, much more to classify. Its airy theories and symbolic figures suggest a possible Millerite interpretation of the visions of the prophet Daniel. Certain it is when the proposed "basis of nomenclature" shall be adopted, the end of the world will be near at hand.

Dr. Crouse is nothing if not intensely practical, and his paper presents briefly some sensible views of an interesting question.

Dr. Darby, chairman of the Section on Operative Dentistry, made a brief report principally relating to the methods of Drs. Younger and Herbst. As to the special operations of these gentlemen he holds, and justly, we think, quite conservative views, believing that the ultimate success of implantation is a matter of serious doubt, and the rotary method one not likely to be generally accepted.

Dr. Morrison, of the section, exhibited casts illustrating his methods of correcting certain forms of irregularity, and the discussion relating to operative dentistry turned almost entirely into this line. The report and discussions cover only ten pages, and contain little that is new to readers of the periodicals. Several interesting cases, however, were cited by Drs. Barrett, Morrison, and others. Dr. Crouse made some practical remarks on premature extraction of the temporary teeth in producing irregularities, and Dr. Harroun described methods of rotating teeth.

Dr. Frank Abbott, Chairman of the Section of Histology and Microscopy, made an interesting report of his investigations of the minute anatomy of the teeth of rabbits. It is worthy of a careful perusal, even by those who heard it read.

The report of the Chairman of the Section of Materia Medica and Therapeutics, Dr. Harlan, had special reference to the treatment of pulpless teeth and filling of root canals. This, with the discussion following, supplemented somewhat the brief attention before given to operative dentistry.

The matter was practical in character, and while containing little, if anything, new, was one of those repetitions which will

bear repetition, as it would seem, without end. For if there be any one subject regarding which a large number of practitioners seem obstinately determined to remain in error, both in theory and practice, it is this of the management of teeth, found pulpless or to be so made, line upon line, here a little and there a good deal, will be required till scientific methods shall be generally adopted and practiced.

Section VI., Physiology and Etiology, was represented by Dr. C. N. Peirce, who read a paper on the Deciduous Teeth, their Eruption and Removal.

This is a paper possessing more than usual interest. It is the fruit of much reading and thought, and takes a little wider range in places than the text would seem to warrant. This may have been in part owing to the insufficiency of the word *Eruption* to properly convey the meaning intended, a point brought out in the discussions following, when various substitutes were proposed, among others the word "projection" by Dr. Abbott.

In the opening paragraph of his paper the writer went far back of the so-called eruptive period of dentition, and begged the whole question of evolution in the most extreme signification of that term. He says:

"That the evolution of human dentition has, in common with the dentition of other mammals, been from a simple and homogeneous type to a more complex and heterogeneous one, both as regards structure and form, is established beyond a doubt. * * * If, as has been suggested, we are limited in our choice to the batrachia and reptilia as (our) mammalian progenitors, then to these animals must we look for our most primitive tooth-forms. These we find consisting of cone-shaped anchylosed crowns, the number large, uncertain, and frequent, and the succession almost endless. Accepting the 'placoid scale,' or the 'dermal denticle,' as the structure from which all teeth were primarily derived," etc.

Established beyond a doubt! Not unless it is also "established beyond a doubt" that we ourselves are the descendents of frogs, lizards, turtles, and snakes, from the acceptance of which proposition there are some who would ask to be excused.

Now, there is certainly a large number not only without but *in* the scientific world who do not merely doubt, but most posi-

tively disbelieve anything of the sort. They acknowledge the theory plausible and ingenious, but thoroughly distasteful and incapable of positive proof. To them there seems to be not one missing link only, but thousands; in truth the links would seem to be all isolated—graded in resemblances, but no two connected. It is certainly not “established beyond a doubt” in the minds of these men that all the so-called links have been linked, or even tied together with strings. Comparison is one thing, and genesis another.

Analogues are found everywhere, but we need not call them relatives, parents or cousins. There are intelligent people who would as soon think of seeking for the origin of man in a second growth hickory as a snake or an ape. They think it reasonable to suppose that in successive periods of time, in accordance with the fitness of things, the higher forms of organized beings were *created* by the same intelligent power which had created the lower—out of something.

The oldest tooth of the oldest discovered skeleton bears just as much resemblance, and no more, to that of a snake, as one drawn from the mouth—say of Jay Gould.

It is all right for those to believe in the theory who can, but do not say, please, “it is established beyond a doubt.”

Aside from the first few paragraphs, which have no essential connection with it as a whole, the paper is one of unusual value. The whole question of the eruption and loss of the deciduous teeth has been considered carefully, though in brief, and there is nowhere to be found, perhaps, an epitome of the subject equal to this.

Dr. Brophy, Chairman of the Section of Anatomy, Pathology and Surgery, made a short report, principally to the effect that owing to the various uncertainties antecedent to the meeting there was little to report.

He called special attention to the question of implantation, and announced a paper by Dr. Atkinson on Sponge Grafting as the contribution of his section.

This paper, when read, demonstrated the fact that when the author chooses to walk upon the earth, along the common ways of common mortals, he can make his meaning plain. It is thor-

oughly concise, clear, and practical, consequently valuable and well worth a careful study.

The last report was that by Section 1, Prosthetic Dentistry, Metallurgy, and Chemistry, Dr. C. H. Harroun, chairman. Like the preceding, it was brief, and apologized for its brevity. It deplored decline in this department of dental work, but thought there was the dawn of a brighter day in the new interest awakened by crown and bridge work, which Dr. Harroun says has "come to stay in some form, when it has passed through the stages of evolution necessary to eliminate from it that which is impracticable, leaving behind the true and useful, that is to stand the test of time and experience."

This report, with a short discussion, ended the professional work of the American Dental Association for 1887, and, on the whole, there is little reason to be dissatisfied therewith.

G. N.

BEECHER'S DENTAL DIRECTORY OF THE UNITED STATES. M. P.

Beecher, Compiler. New York: Beecher & Co., Publishers, 42 Third Avenue; 1888.

This cloth-bound, gilt-edged, well-printed octavo volume of 196 pages contains a list of dentists in the United States, as well as a list of dental colleges and dental publications, and a dental trade directory. The latter is the most perfect section of the volume. The list of dental publications contains but few inaccuracies, *e. g.*, *The Dental News*, at Knightstown, Ind., has ceased publication two or three years ago, and the *Dental Office and Laboratory*, formerly published by Johnson & Lund, was discontinued last December. To the list of twenty-eight colleges should be added the Dental Department of the Columbian College, at Washington, D. C., and the Dental Department of the Southern Medical College, at Atlanta, Ga., to make it complete up to December, 1887.

We have carefully examined the list of names in those sections of the country with which we are familiar, and we also have compared the lists with those published by the Boards of Examiners of several of the States, and have found a number of inaccuracies, which we hope in future editions of a useful volume of this nature, will be entirely absent. In the list of dentists of

Chicago alone, over a dozen mistakes were found. The work of compiling a perfect and entirely satisfactory directory of this nature is a very difficult task, and the compiler is to be congratulated even on the partial success made, and we have no doubt that each succeeding issue will be an improvement on the one preceding it.

DENTAL KALENDER FÜR DEUTSCHLAND; 1888. I Jahrgang; Theil I u. II; Breslau: Erich Richter, M. D., D. D. S., Editor.

This dental calendar for 1888 for Germany, appears in two parts. Part I is cloth bound, and is designed for an appointment book containing one page for each day in the year. Within its covers may also be found a system of notation (Hillischer) for recording operations on the natural teeth; a list of drugs and remedies used by dentists, and the doses and application of these medicines; table of decimal weights and measures, also of English and American weights; tables of the temperature of the body at different ages and conditions; table for converting the scales of temperature from one system to another; table showing the atmospheric pressure at different degrees of heat; recipes for the preparation of solders, etc., etc.

The appointment book, as well as these tables of reference, are undoubtedly of much benefit to those desiring to use them.

Part II is in paper covers, and contains fee tables for the use of dentists; a list of dental works and magazines which have been published in the German, French, and English languages during the year 1887; a list of dental schools of the world; a list of the principal dental societies of the United States; a list of cities having a population of over 5,000, wherein no dentist is located; formulæ for the manufacture of powders, pastes, and washes designed to cleanse the teeth and mouth; and a table of statistics showing the number of persons engaged in dental practice in Germany during 1887. Also a list of the dentists practicing throughout the German empire. The list of dental schools is not quite as complete as may be desired, neither is that of the dental societies in the United States. From looking over the list of cities having a population of more than 5,000, but where no dentists are located, we should judge that there is yet ample room for dentists in

Germany. From the table of statistics the following facts are gleaned:

Dentists licensed in Germany	-	-	-	-	-	523
“ D. D. S., and D. M. D.	-	-	-	-	-	115
“ licensed in other foreign countries	-	-	-	-	-	33
Mechanical dentists	-	-	-	-	-	1498

Total of persons in Germany engaged in dental pursuits - 2169

TRANSACTIONS OF THE NEW YORK ODONTOLOGICAL SOCIETY, 1887. Philadelphia: The S. S. White Dental Manufacturing Co., 1888.

This volume of 209 pages needs no comment, when viewed from a typographical standpoint. The imprint of the publishers removes any question which may exist in that regard.

As to its contents, the volume exceeds its predecessors in point of interest. The valuable papers it contains are mostly well known to the reading portion of the profession, having appeared from time to time in the pages of the *Dental Cosmos*, from which these transactions are, in fact, reprinted. The most important and interesting contribution of the year is the paper on “The Significance of the Natural Form and Arrangement of the Dental Arches of Man, with a consideration of the changes which occur as a result of their artificial derangement by filing or by the extraction of teeth,” by Dr. I. B. Davenport, of Paris, France.

TRANSACTIONS OF THE DENTAL SOCIETY OF THE STATE OF NEW YORK. Nineteenth annual meeting. May, 1887.

This is a neat volume of 131 pages, containing several papers of much practical value, notably the papers of Drs. J. M. Howe, C. T. Stockwell, and F. Y. Clark, on “Teeth with Dead Pulp without Fistula, and the Filling of Roots.” The paper of Daniel Nason, Esq., on “The Legal Status of Dentists,” is an able production, and well worthy of careful perusal. The address of the president, Dr. Norman W. Kingsley, is full of matter for thought and worthy the distinguished author. Publication committee, J. Ewd. Line, Frank French, and F. A. Greene.

BOOKS RECEIVED.

LECTURES ON CERTAIN DISEASES OF THE JAWS. Delivered at the Royal College of Surgeons, of England, 1887. By Christopher Heath, F.R.C.S. Illustrated. London: J. & A. Churchill. For sale by Claudius Ash & Sons and W. T. Keener. Price, 2 shillings and 6 pence, in paper covers.

NOTE-BOOK FOR DENTAL STUDENTS (DENTAL ANATOMY AND PHYSIOLOGY). James Rymer, L.D.S., Eng., M.R.C.S. London: J. & A. Churchill. For sale by C. Ash & Sons and W. T. Keener. Price, 2 shillings, cloth.

THE STUDENT'S MANUAL AND HANDBOOK FOR THE DENTAL LABORATORY. By L. P. Haskell, of the Dental Department of the Northwestern University, of Chicago. The Welch Dental Company, publishers, Philadelphia, Pa. Cloth, pages 79. Price, \$1. For sale by W. T. Keener.

THE DIAGNOSIS AND TREATMENT OF HÆMORRHOIDS, WITH GENERAL RULES AS TO THE EXAMINATION OF RECTAL DISEASES. By Chas. B. Kelsey, M.D. Geo. S. Davis, publisher, Detroit, Mich. Cloth; price, \$1.

PAMPHLETS RECEIVED.

Vaginal Hysterectomy. Report of four cases. By J. H. Etheridge, A.M., M.D. (Rush.)

Studies of Pyorrhœa Alveolaris. By M. L. Rhein, M.D., D.D.S., New York.

Sixth Annual Announcement of the New York Post Graduate Medical School and Hospital, New York City.

Lomb Prize Essays. Published by the American Public Health Association.

Healthy Homes and Foods for the Working People. By Victor C. Vaughan, M.D., Ph.D.

The Sanitary Conditions and Necessities of School Houses and School Life. By D. F. Lincoln, M.D.

Disinfection and Individual Prophylaxis Against Infectious Diseases.

The Preventable Causes of Diseases, Injury and Death in American Manufactories and Workshops, and the best means and appliances for preventing and avoiding them.

A SUGGESTED SYSTEM OF DENTAL NOTATION, by George Cunningham, B. A. (Cantab.), D. M. D. (Harv.), L. D. S. (Eng.)
 London: Published by the Dental Manufacturing Company, Limited.

DENTAL COLLEGE COMMENCEMENTS.

INDIANA DENTAL COLLEGE.

The ninth annual commencement exercises of the Indiana Dental College were held at Plymouth Church, Indianapolis, Ind., on Wednesday evening, March 7th, 1888.

The address on behalf of the faculty was delivered by L. S. Henthorne, M. D., Professor of Physiology, and the degree of Doctor of Dental Surgery was conferred on the gentlemen named below by the President of the Board of Trustees, Dr. W. L. Heiskell. The attendance during the year was thirty. Two of the graduates hold the degree of M. D.

W. J. P. Lawton, Nebraska.
 C. P. Curtis, Indiana.
 J. L. Barnes, Illinois.
 H. S. Hicks, Indiana.
 W. H. Beeson, Indiana.
 E. Reese, Ohio.
 G. W. Raber, Wisconsin.
 J. H. Daugherty, Indiana.
 R. H. Clark, Massachusetts.

L. A. Stewart, Indiana.
 W. M. Jones, Indiana.
 J. W. Lopp, Indiana.
 W. A. Alexander, Illinois.
 M. DeF. Kee, Ohio.
 C. J. Lange, Wisconsin.
 J. S. McCurdy, Indiana.
 R. T. Oliver, Indiana.

MISSOURI DENTAL COLLEGE.

The twenty-second annual commencement exercises of this College were held at Memorial Hall, Nineteenth and Lucas Place, on Monday evening, March 8th, 1888. The number of matriculates during the session was thirty-five. The degree of Doctor of Dental Surgery was conferred on the following named gentlemen:

W. S. Cady, Fredonia, Kas.
 Jno. A. Fries, St. Louis, Mo.
 Jesse E. Grosheider, New Albany, Ind.
 John H. Kennerly, Shelbyville, Mo.
 R. E. Kiernan, jr., Huntsville, Mo.
 C. W. Knox, Troy, Mo.
 H. Muetze, Ph. G., St. Louis, Mo.

Jno. G. Northington, Emporia, Kas.
 Murray W. Phillips, New Madrid, Mo.
 W. A. Roddy, Ashland, Mo.
 M. T. Smith, Springfield, Mo.
 Hugo E. Wangelin, Belleville, Ill.
 C. H. Williams, De Soto, Mo.

SOUTHERN MEDICAL COLLEGE—DENTAL DEPARTMENT.

The first annual commencement exercises of this institution were held on Wednesday evening, February 29th, 1888. The number of matriculates was twenty-six and the degree of Doctor of Dental Surgery was conferred on the following named gentlemen:

A. Y. Boss, Georgia.
 G. C. Brause, Tennessee.
 J. A. Pepper, Virginia.

J. M. Reese, Georgia.
 Bemis Wichert, Russia.
 J. A. Wills, Georgia.

PENNSYLVANIA COLLEGE OF DENTAL SURGERY.

The thirty-second annual commencement exercises of this institution were held at the American Academy of Music, Philadelphia, Pa., on Thursday evening, March 1st, 1888.

The address on part of the Faculty was delivered by Professor Henry Leffman, M. D., D. D. S., the Valedictory by E. A. Hall and the degree of Doctor of Dental Surgery was conferred by the President, S. W. Gross, M. D., LL. D., on the following named persons :

John C. Apeldorn, Pennsylvania.
Mortimer J. Barrett, Pennsylvania.
Jos. C. Bates, Minnesota.
Ansel P. Calvert, Missouri.
Wilhelmina Carsten, Germany.
Enos E. Clark, Kingston, Jamaica.
A. C. Cope, Pennsylvania.
C. B. Cragin, Minnesota.
E. M. Cundall, Pennsylvania.
Geo. H. Cutler, New York.
Elbert T. Davis, New Jersey.
Geo. H. Duncan, Pennsylvania.
R. R. Dunshee, Missouri.
F. L. Ferguson, Illinois.
Byron E. Fortiner, New Jersey.
Clinton Franklin, Pennsylvania.
Samuel L. Good, Pennsylvania.
W. G. Hales, Wisconsin.
A. E. Hall, Pennsylvania.
E. J. Hausle, New York.
M. C. Harrington, New York.
A. P. Hays, Pennsylvania.
Bernard Herz, Pennsylvania.
W. B. Hills, Connecticut.
Henry C. Hinchman, Pennsylvania.
E. E. Holmes, Pennsylvania.
E. L. Housel, Pennsylvania.
F. W. Hunter, Massachusetts.
G. M. Johnston, Pennsylvania.

Emma T. Kolb, Pennsylvania.
W. P. Lamborn, Pennsylvania.
G. P. Lang, Pennsylvania.
Chas. W. Lennox, Canada.
C. D. Lowry, Pennsylvania.
J. Warren Manning, Pennsylvania.
A. A. MacConnell, Pennsylvania.
Emanuel Michaelis, Germany.
W. S. Minich, Ohio.
J. R. Moore, Pennsylvania.
W. H. Moore, Pennsylvania.
Albert E. Moritz, Germany.
B. B. Mories, Canada.
Johanna Nauhaus, Germany.
T. Adams Pratt, Pennsylvania.
Jas. W. Rowell, Minnesota.
D. B. Smith, Georgia.
Samuel E. Starr, Pennsylvania.
Mary H. Stilwell, Pennsylvania.
J. Stuart Tait, Pennsylvania.
C. L. Thourot, Pennsylvania.
E. Washburn Todd, New York.
B. Norman Tuttle, Pennsylvania.
Wilbur M. Vansant, Pennsylvania.
Geo. K. Ware, Pennsylvania.
Martha Woebecke, Germany.
Howard H. Whitaker, Pennsylvania.
H. B. Wright, Canada.
William Ziesel, Pennsylvania.

COLUMBIAN UNIVERSITY—DENTAL DEPARTMENT.

The first annual commencement exercises were held in conjunction with the Medical Department of Columbian University at Albaugh's Opera House, on Thursday afternoon, March 15th, 1888. The address to the dental graduates was delivered by L. C. F. Hugo, D.D.S., and the conventional degree was conferred by the president, J. C. Welling, LL.D., on the following named persons :

Charles R. Davis, Maine.
Benjamin J. Eslin, Distr. of Columbia.
George W. Hay, New York.

William G. Schafhirt, District of Columbia.

BALTIMORE COLLEGE OF DENTAL SURGERY.

The forty-eighth annual commencement exercises of this college were held on Thursday, March 8th, 1888, at the Lyceum Theatre, Baltimore, Md. The number of matriculate during the year was one hundred and fourteen. The address to the graduates was delivered by Dr. W. H. Dwinelle of New York, the

class valedictory by Dr. W. W. Dunbracco. The degree of Doctor of Dental Surgery was conferred on the following named persons :

W. D. Williams, Virginia.	J. W. Semones, Virginia.
T. H. Kellam, Virginia.	W. R. Knight, jr., New York.
L. W. Wilson, Virginia.	L. P. Leonard, Dakota.
T. Wright, Jr., Virginia.	A. C. Liverman, North Carolina.
A. E. Kellogg, Pennsylvania.	B. F. Mardis, Pennsylvania.
E. C. Kirby, Maryland.	C. H. McLean, Illinois.
J. B. Walton, District of Columbia.	A. Mills, California.
J. E. Ward, Pennsylvania.	R. H. Moloney, California.
F. A. Warnes, Connecticut.	W. P. Moore, Virginia.
C. F. Harding, New York.	W. S. Gregory, Virginia.
G. E. Hardy, Virginia.	W. F. Holt, Georgia.
C. W. F. Holbrook, New Jersey.	J. H. Crossland, Alabama.
A. W. Seidler Maryland.	J. C. Dana, New York.
J. W. Smith, Virginia.	M. L. Dawson, Virginia.
M. A. Sparks, Alabama.	J. W. Fisher, Virginia.
G. J. Sproul, California.	J. D. Ford, jr., Maryland.
R. H. Stephenson, Virginia.	S. W. Gregory, North Carolina.
S. Szuwalski, Maryland.	W. W. Dunbracco, Maryland.
H. W. Talley, Virginia.	D. S. Arnold, Alabama.
W. J. Thurmond, Georgia.	R. Blackwell, Virginia.
C. G. Myers, Indiana.	R. H. Blair, Texas.
H. Muller, Germany.	F. V. Brooking, Illinois.
J. M. Parker, North Carolina.	C. C. Buck, Maryland.
G. W. Patten, Minnesota.	W. E. Bunn, Georgia.
W. H. Phillips, New York.	W. D. Cowan, California.
J. Rust, Virginia.	R. E. Wilkinson, New York.
W. H. Savage, North Carolina.	

ST. LOUIS COLLEGE OF PHYSICIANS AND SURGEONS.—DENTAL DEPARTMENT.

The first annual commencement exercises of this institution were held on Saturday evening, March 3rd, 1888, at Memorial Hall, St. Louis, Mo. The following named gentlemen received the degree of Doctor of Dental Surgery :

W. G. Lange.	Geo. E. Beal.
J. R. Moore.	Peter H. Eisloeffel.
J. C. Cave.	Albert H. Hammen.
— Collins.	

Carl Summa, D.D.S.,
Graduate of Missouri College, received the *ad eundem* degree.

MEHARRY SCHOOL OF DENTISTRY.

The second annual commencement exercises of this institution, devoted entirely to the education of the colored race, were held at the Grand Opera House, Nashville, Tenn., on Monday evening, February 20th, 1888. The address to the graduates was delivered by J. P. Bailey, D.D. S., and the valedictory by Dr. C. M. Wade. J. Braden, president of the school, conferred the degree of Doctor of Dental Surgery on the following-named gentlemen:

Henry Lewis Smith, Bastrop, Tex. Claude Melnotte Wade, Hot Springs, Ark.

PHILADELPHIA DENTAL COLLEGE.

The twenty-fifth annual commencement exercises were held at the Academy of Music, Philadelphia, Pa., Friday evening, February 24th, 1888. The number of matriculates during the session was 214. The address to the graduates was delivered by Prof. Henry I. Dorr, M. D., D.D. S., and the valedictory address by

Lewis A. Obrian, D.D. S. The degree of Doctor of Dental Surgery was conferred on the following-named persons:

- Albee, Edgar D., Massachusetts.
 Allis, D. Hurlbut, Massachusetts.
 Anderson, Charles E., New York.
 Andrews, Graham A., New York.
 Atwood, David G., New Jersey.
 Barden, George Franklin, Connecticut.
 Beckett, William T., Australia.
 Bell, T. Edwin, Canada.
 Betts, Harry A., Canada.
 Bennett, Arthur J., Australia.
 Black, Charles J., Pennsylvania.
 Boone, Nathaniel I., Missouri.
 Brady, James, Pennsylvania.
 Belden, H. E., Louisiana.
 Brown, John B., Illinois.
 Brunson, M. D., G. M., Michigan.
 Clark, Sylvester W., Rhode Island.
 Cook, Alonzo A., New York.
 Craig, John A., Canada.
 Davis, Elizabeth A., Pennsylvania.
 Diamond, Frank I., Pennsylvania.
 Dixon, George Wheaton, Massachusetts.
 Dunn, Edward, Italy.
 Duncan, Hobart E., Iowa.
 Dupuis, L. V. W., Canada.
 Fowser, John R., Illinois.
 Frain, James K., Canada.
 Fritz, Joel R., Nova Scotia.
 Greene, Arthur Y., Massachusetts.
 Gregory, F. P., Pennsylvania.
 Hall, Lewis, British Columbia.
 Hamm, William C., Ohio.
 Harrison, C. Olin, Pennsylvania.
 Haskell, Alaric W., Maine.
 Heineken, T. S., New Jersey.
 Hasketh, William R., Pennsylvania.
 Hess, Milton J., Pennsylvania.
 Hickman, Ziba, Pennsylvania.
 Holmes, Clarence A., California.
 Hudders, Ivan Lee, Pennsylvania.
 Hunters, Henry L., Illinois.
 Hunsberger, H. W., Pennsylvania.
 Jackson, Charles A., Nova Scotia.
 Jackson, William A., Pennsylvania.
 Jameson, Alexander, Indiana.
 Johnston, Robert, California.
 Jones, T. Harry, British Columbia.
 Justus, F. A., Portugal.
 Kaiser, W. B. C., Germany.
 Keene, James A., Oregon.
 Keim, Charles Albert, West Virginia.
 Kellogg, T. Sterling, Pennsylvania.
 Kempter, George W., Wisconsin.
 Kester, William M., New Jersey.
 Ketner, John S., Pennsylvania.
 Knowlton, F. W., Ohio.
 Lacavèlerie, Sebastian, Cuba.
 Lemoree, Marshall H., New York.
 Lane, Frederic J., California.
 Langille, Z. M. K., Nova Scotia.
 Leavitt, Fred. L., Maine.
 Lessey, Luther M., Connecticut.
 Liddy, John E., New York.
 Lodge, Lionel S., New York.
 Longstaff, H. H., New York.
 Marr, R. A., Canada.
 Marcus, H. D., Austria.
 Markle, A. M., Indiana.
 Mayor, William E., New York.
 MacNeil, William, Scotland.
 McInnis, S. M., Canada.
 McKay, G. R., Nova Scotia.
 McKenna, A. J., Nova Scotia.
 McManus, Charles, Connecticut.
 McMichael, H. R., Canada.
 Mease, Ed. G., Pennsylvania.
 Mercer, Hannah J., Pennsylvania.
 Meroney, LeRoy J., North Carolina.
 Miller, L. Early, Pennsylvania.
 Milligan, George C., West Virginia.
 Moffit, John W., Pennsylvania.
 Monk, Charles J., England.
 Morris, Elmer J., Maine.
 Mossman, Ed. P., Iowa.
 Muir, Charles W., Nova Scotia.
 Obrian, Lewis A. jr., Rhode Island.
 Packard, Elmer A., New Jersey.
 Payson, George B., Pennsylvania.
 Perry, E. E., Rhode Island.
 Popper, Jacques, Austria.
 Powers, Edward E., Italy.
 Reeser, Alpheus, Illinois.
 Reinohl, Harvey B., Pennsylvania.
 Roberts, Jethro G., Canada.
 Rodgers, C. Fred., Ohio.
 Rogers, William J., Ohio.
 Rosenthal, William M., Pennsylvania.
 Schættle, R. R., Wisconsin.
 Scholl, Charles R., Pennsylvania.
 Scott, H. R., Virginia.
 Shaw, De Witt C., Massachusetts.
 Slade, Samuel C., Connecticut.
 Sloane, George A., Pennsylvania.
 Stephens, A. B., Pennsylvania.
 Stoughton, Olin W., Vermont.
 Stuart, Robert W., Canada.
 Sweeney, Charles, New York.
 Taylor, Clarence G., Illinois.
 Thompson, George E., Canada.
 Todd, Elmer C., Indiana.
 Topliff, Charles L., Iowa.
 Urueta, Edwardo, jr., Mexico.
 Varrell, Hall T., New Hampshire.
 Wark, Allen W., Illinois.
 Warner, Eugene R., Illinois.
 Waters, Alfred H., Pennsylvania.
 Weagant, E. E., Canada.
 Wood, F. L., Maine.
 Woodward, F. F. C., New Jersey.

MINNESOTA HOSPITAL COLLEGE—DENTAL DEPARTMENT.

The seventh annual commencement exercises of the Dental Department, Minnesota Hospital College, were held in conjunction with the Medical Department, in the Hennepin M. E. Church, on Friday, March 16th, 1888. The address was delivered to the graduates by the Rev. Dr. D. J. Burrell, and the valedictory on behalf of the class by C. D. Snow, D.D.S. The number of matriculates for the session was thirty-eight. The degree of Doctor of Dental Surgery was conferred on the following graduates by C. H. Hunter, A.M., M.D., president of the Faculty.

H. G. Dampier, Minnesota.
A. N. Cheney, Minnesota.
C. D. Snow, Minnesota.
H. T. Burnette, Minnesota.

C. L. Sargent, Wisconsin.
D. H. Carpenter, Minnesota.
A. H. Benson, M. D., Wisconsin.
J. D. Jewett, Minnesota.

NEW YORK COLLEGE OF DENTISTRY.

The twenty-second annual commencement exercises were held at Chickering Hall, on Saturday Evening, March 10, 1888. The number of matriculates were two hundred and eleven. The address to the graduates was delivered by Rev. Thos. Gallaudet, M. D., the Valedictory by Albert Westlake, jr., D. D. S., and the Vice-President of the Board of Trustees, Dr. William T. La Roche, conferred the degree of Doctor of Dental Surgery on the following named gentlemen :

Franklin Porferio Arango.
William Fletcher Acton.
Vincent Washington Baker.
Winfield Hart Baldwin.
Charles Leslie Babcock.
Virgilio Bazan.
Jacob Bate.
Stephen Edward Best.
Herman Tobias Braun.
John L. Crater.
Francis Anthony Chicherio.
Julian Hyde Clark.
Johannes Fredrich Wilhelm Clasing.
Jose Anselmo Arcelio de Castro.
João Rodriguez da Silva.
William Lewis Drummond.
William Billings Drake Davenport.
Frank Morseman Dunn.
William Salsbery DePew.
Frederick Hubert Eichhorn.
David Nathan Feigensohn.
Edward Fox.
Edward Beardsby Griffith.
Walter Ephram Gerrish.
John Conrad Graft.
Karl Ferdinand Alfred Hane.
Fred Miner Hayward.
George Buck Herbert.
Jacob Hassinger.
Elias Scudder Hall.
William Phillip Ives.
Henry Arthur King.
Edward Max Kettig.
Dennis Frank Keefe.
Isaac Lyon.
Charles Melzar Lindsey.

Cortez Jefferson Mapp.
Simon Therdor Alfons Müller.
Charles Everett Maine.
Frederick Louis Marshall.
Nerson Merwin.
Eugene Walton Marshall.
Vincent Maurice Munier.
Louis Philippe Margron.
Henry John Moore.
John James Marchant.
Horace Wilson Northrop.
Frederick Nies.
Albert Brown Osmun.
William Heston Pruden.
Charles Albert Pickhardt.
Herman Thomas Havelock Russell.
Edward Stephens Rugg.
David Barclay Smith.
Arthur Percy Sturridge.
William Henry Steeves.
Clarence Boice Stelle.
Lem Andrew Smith.
John Scott Sanger.
Charles Simon Sweedy.
Lewis Mapes Slocum, jr.
Livingston Andrew Snyder.
Edmund Louis Stevens.
William James Taylor.
Willard Forrest Tooker.
Frank Van Blarcom.
Charles Frederick Weber.
Ernest Ford Weed.
Harry Prescott Wilcox.
Albert Westlake, jr.
Alfred Wagner.
Charles Dutton Wright.

CHICAGO COLLEGE OF DENTAL SURGERY.

The sixth annual commencement exercises of the Chicago College of Dental Surgery were held at the Grand Opera House, Chicago, Ill., on Tuesday afternoon, March 27, 1888. The number of matriculates during the past session was one hundred and twenty-six. The address on part of the Faculty was delivered by Prof. Truman W. Brophy, M. D., D. D. S., the Valedictory by Dr. A. H. Peck, and the degree of Doctor of Dental Surgery was conferred by Dr. James A. Swasey, President of the Board of Trustees, on the following named gentlemen:

Adelbert Henry Peck.
 Frank B. Clarke.
 John Wesley Alderson,
 James Ward House.
 George Edward Long.
 John Charles Barclay.
 George H. Becker.
 Clayton W. Bennett.
 Orrin George Bennett.
 Frank William Cady.
 Sherman L. Chappell.
 Rush E. Crissman.
 William G. Dalrymple.
 Charles H. Darling.
 Frank Henry Davis.
 Samuel Finley Duncan.
 William A. Fortuin.
 Clarence B. Freeman.
 Robert C. Gardner.
 Thomas Dimma Gardner.
 Grant A. Goodrich.
 Valentine A. Gudex.

Alfred Ward Hebert.
 Peter M. Hendershott.
 Albert Frank Henkel.
 Thomas Francis Henry.
 Richard Herrmann.
 Henry K. Kerman.
 Richard Kessel.
 William Kuester.
 Louis Frank Lattan.
 Alfred Lowther.
 Anthony Mann.
 Clare W. Marshall.
 Edward M. McIntosh.
 Charles J. Merriman.
 Ewing Morris, V.D., M.D.
 Hans Theodore Nordahl.
 George Reedy.
 Frank M. Russell.
 Harry Reid Staley.
 Henry Stewart.
 Rupert De G. Treen.
 Samuel A. Whedon.

In the evening the graduates and fifty of the alumni banqueted at the Riche-lieu. President J. A. Swasey was at the head of the board. After dinner Judge Shepard responded to "The Legal Profession" and Prof. Edmund Noyes to "The Clergy." Other toasts were responded to by F. B. Clark, Prof. J. H. Etheridge, S. R. Bingham, and E. E. Cady.

NORTHWESTERN COLLEGE OF DENTAL SURGERY—DEPARTMENT
 OF DENTAL AND ORAL SURGERY OF LAKE FOREST
 UNIVERSITY.

The third annual commencement exercises of this college were held at Weber Music Hall, Chicago, on Tuesday afternoon April 3d, 1888. The doctorate address was delivered by Prof. Julien E. Hequembourg, M.D., the valedictory by Bernard John Cigrand, D.D.S., and the degree of Doctor of Dental Surgery was conferred by the president of the University, William C. Roberts, D.D., LL.D., on the following named persons:

Emma Louise Benham, M.D.
 Elden Tappan Brigham.
 Bernard John Cigrand.
 Peter John Cigrand.
 Emanuel Kargau.
 Eustace Worth Persons.

Ernst Pfennig.
 Edward Paul Ryan, M.D.
 James Patrick Way M.D.
 Charles Ranney Whitcomb.
 Charles Clement Whitmore.

AMERICAN COLLEGE OF DENTAL SURGERY.

At the second annual commencement exercises of this institution held March 28th, 1888, the following named gentlemen received the degree of Doctor of Dental Surgery :

Robert Steele.
Wm. F. Lewis.
Lester F. Lerchner.
Jas. L. Newman.
Luther H. Varney.

L. T. Hale.
S. M. White.
George A. Thomas.
C. R. Rowley.
A. G. Goodman.

UNIVERSITY OF MARYLAND—DEPARTMENT OF DENTAL SURGERY.

The department of dental surgery of the University of Maryland held its sixth annual commencement Wednesday, March 14, 1888. Number of matriculates for the session, 109. The degree of Doctor of Dental Surgery was conferred on the following named :—

Benjamin F. Baer, Pennsylvania.
Robert A. Bates, Virginia.
John H. Bean, Massachusetts.
William C. Berry, Virginia.
Thomas C. Blackiston, West Virginia.
George W. Blakeslee, New York.
Joseph H. Burgess, South Carolina.
Marshall O. Burkholder, Virginia.
Theodore A. Cross, West Virginia.
Samuel S. Daniel, South Carolina.
L. Wilson Davis, Maryland.
John W. Dean, West Virginia.
William E. Dieffenderfer, M. D., District of Columbia.
Manoog D. Dinjian, Turkey.
George D. Feldmeyer, Maryland.
J. Edgar Fitzgerald, Maryland.
Julian Gartrell, Maryland.
Clarence J. Grieves, Maryland.
John M. Hamlet, Virginia.
Charles E. Harper, Virginia.
P. Edmond Hines, North Carolina.
Charles R. Holt, New York.
Charles P. Hubley, Pennsylvania.
Ireneus P. Jeter, South Carolina.
John A. Keepers, Pennsylvania.

Robert E. Lee, South Carolina.
Sylvester K. Marshall, Maryland.
A. Douglas McConachie, Canada.
Thomas J. McLaughlin, South Carolina.
Gerhard W. Muller, Germany.
George F. Nelson, M. D., Maryland.
Frank H. Page, Canada.
Francis E. Rambo, Georgia.
Stafford Rambo, Georgia.
Robert P. Rawlinson, South America.
Harry J. Ray, South Carolina.
Edgar G. Smith, New York.
Edgar L. Smith, West Virginia.
Howard M. Smith, Virginia.
James P. Smith, Virginia.
Daniel B. Snively, Pennsylvania.
Frank Ryland Steel, Virginia.
A. Zackary Taylor, North Carolina.
Fred. P. Todd, Maryland.
Joseph J. Vegas, New York.
Willis E. Watts, New York.
Jacob L. Weirich, Pennsylvania.
Fred. M. Wheeler, New Hampshire.
Robert A. Wilbur, South Carolina.
George L. Wilcox, New York.
Frank M. Willis, South Carolina.

HOWARD UNIVERSITY—DENTAL DEPARTMENT.

The second annual commencement exercises of this institution were held in conjunction with those of the medical and pharmaceutical departments at the Congregational church, Washington, D. C., on Wednesday evening, March 14th, 1888. The address to the graduates was delivered by Prof. John E. Brackett, and the degree of Doctor of Dental Surgery was conferred by William W. Patton, D.D., LL.D., president of the Board of Trustees, on the following named gentlemen:

George Geffries, Germany.
William S. Lofter, District of Columbia.
Robert M. R. Nelson, New York.
Nathaniel Nesbitt, Alabama

Edward F. Narcup, Vermont.
Walter S. Over, District of Columbia.
F. W. Rudolph, Germany.

KANSAS CITY DENTAL COLLEGE.

The annual commencement exercises of this institution were held at Music Hall, Kansas City, Mo., on Tuesday evening, March 13th, 1888. The degree of Doctor of Dental Surgery was conferred on the following named gentlemen :

R. V. Anderson.
J. L. Leavel.
F. L. Murdock.
J. L. Reavis.

W. L. Reed
H. S. Smith.
E. S. Sweet.
C. M. Tindale.

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TO THE EDITOR OF THE DENTAL REVIEW :

Dear Sir.—Will you please state what means of redress a dentist can resort to in cases where appointments are broken by patients without notice and without cause, and in face of the fact, that at the time the appointment was made, they received the usual appointment card, stating amount to be charged for loss of time unless due notice is given.

Chicago, April 2, 1888.

Yours truly,
J. L. C.

TO THE EDITOR OF THE DENTAL REVIEW :

Sir.—The dealers in copper amalgam recommend the use of the scraps for filling purposes. Why are not the scraps from other amalgams, if heated and triturated the same as copper amalgam scraps, just as good? Please answer and oblige.

Yours truly,
A READER.

TO THE EDITOR OF THE DENTAL REVIEW:

Dear Sir.—In answer to N. D. E. in January REVIEW. Read Garretson, 1881, page 686 or use the following :

R Fl. Hydrastis, $\frac{3}{4}$ iv.

Sub. Nit. Bismuth $\frac{3}{4}$ i.

Aqua Dist. $\frac{3}{4}$ xii.

Sig. Syringe thoroughly night and morning.

I have had phenomenal success in several cases with this formula, usually dismiss patient in ten days.

Very truly,
GEO. M. CAMERON.

TO THE EDITOR OF THE DENTAL REVIEW:

Dear Sir.—An 18k gold plate, upper, the ten front teeth being attached with pink, maroon and black rubber, the plate being cut out behind so as not to entirely cover the hard palate, and retained with clasps of ordinary clasp metal was inserted about a month ago. The patient is a healthy woman aged forty-five years. She had worn a vulcanite plate with great satisfaction and entire freedom from "sore mouth" for fifteen years. After wearing the new gold plate four or five days, she returned complaining of a decided copper taste in the mouth with burning sensation in the fauces extending down to the stomach. The patient was furnished with

a palliative mouth-wash and advised to wait a few days longer in the hope that the copperish taste would disappear after it had been worn a short time.

After a week the patient was seen again, she said the symptoms had grown worse until it had been necessary to leave out the plate, after which the discomfort had abated entirely.

A large amalgam filling in a lower bicuspid was the only filling in the mouth except one of gold. This was removed and the patient sent off to make another trial. The same symptoms returned which excluded all possibility of electrical influences.

The materials used were all furnished by the S. S. White Company. Will some one suggest a remedy. L.

TO THE EDITOR OF THE DENTAL REVIEW :

Dear Sir—In your issue of Feby. 15th, '88, the types have caused me to say in my reply to W. E. M. in your ??? department "contignity" it *should* have read *contiguity*. The way it is printed renders the sentence unintelligible.

March 5, 1888.

Yours truly,

W. MITCHELL, London, Eng.

MEMORANDA.

Dr. James B. McPherson of Baltimore is deceased.

Dr. A. A. Blount of Springfield, Ohio, is in Europe.

The Powers engine mallet is the simplest and about the best we have tried.

Dr. E. Magitot is president of the new *Societe de Stomatologie* of Paris, France.

TEXAS STATE DENTAL SOCIETY—Will meet in Dallas the first Tuesday in May,

Jameson's fine nerve broaches are very tough and well tempered. Sold in London.

About 90 dentists were in attendance at the meeting of the Michigan State Dental Association.

The Chicago Dental Club has adopted the code of ethics of the American Medical Association.

Dr. C. H. Harroun of Toledo, Ohio, took an active part in the proceedings at the Michigan meeting.

Daniel Corbett, Esq., of Dublin, is the new president of the Odontological Society of Great Britain.

We know of a good opening in London, England, for an ambitious and well informed American dentist.

Dr. George H. Cushing, of Chicago, is spending a few weeks in the south with his family in quest of health.

Dr. John E. Grevers, of Amsterdam, has placed us under obligations for a complete set of *Der Zahnarzt*.

A good dentist can find a choice location in France, outside of Paris, by applying to the editor of REVIEW.

According to Beecher's directory there are twenty-eight dental colleges in the United States. There are thirty.

Dr. J. Taft helped along the discussions very materially at the late meeting of the Michigan State Dental Society.

Among the dentists who contemplate a visit to Europe this year are Drs. J. W. Wassall and G. V. Black, of Chicago.

Dr. E. Magitot is as industrious as of yore. We are in receipt of four monographs on medical and dental subjects.

Mr. G. H. Cornelsen, of Paris, manufactures a very neat oil can for dentists. which will not soil the fingers when in use.

Richter of Breslau has issued a new directory of dentists in the German and Austro-Hungarian Empires. Price 75 cents.

We are in receipt of an autograph copy of *L'Avenir de L'Art Dentaire en France* by E. Lecaudey, M. D., Paris, France.

The constitutionality of the law requiring licensing of dentists in Indiana was recently affirmed by the supreme court of that state.

The Rev. Henry G. Perry, A. M., Chaplain of the Chicago College of Dental Surgery, is a distant relative of Dr. Chapin A. Harris.

The forthcoming meeting of the British Dental Association next August promises to be largely attended. It will be held in Dublin.

A number of dentists in London are using Mr. Claude Rogers' improved Kirby pneumatic mallet. It will take the Webb electric pluggers.

Dr. A. O. Hunt, of Iowa City, Ia., was incapacitated for work, suffering from a dislocated shoulder last month, but is now entirely well again.

After the close of this year the term of study in the Dental Department of the University of Michigan will be three terms, of nine months each.

Professor G. Blocman, of Paris, is translating Dr. G. V. Black's papers on dental pathology in the *American System of Dentistry* into French.

M. Paul Dubois, editor of *L'Odontologie*, has placed in our hands a copy of "*Aide Memoire du Chirurgien Dentiste*," for which he will please accept thanks.

Stokes hinged molar clamps are about the most useful of all such devices that we have tried. Made by Collins of London and sold by English dental supply houses.

Dr. Carroll of Meadville, Pa., uses bicarbonate of soda, as a flux for aluminum, to be used in freeing the metal from the oxide formed by overheating when casting.

Dentistry as she is taught.—Examination in Regional Anatomy.—Professor: What nerve governs the muscles of facial expression?—Anxious student: The Pathetic.

Mr. G. W. Rutterford, London, showed a very neat pair of pliers for use in the laboratory with adjustable jaws, that will be welcomed by all workers in the laboratory.

In Michigan they say it is perilous to address a Chicago dentist by any other

title than "Professor." Another disadvantage from multiplicity of colleges in our enterprising city.

We can place someone desirous of locating in Odessa, Russia, Naples, Italy, or Christiana, Norway, in communication with a gentleman who can give all the needed information in either of the above cities.

A new set of spoon excavators was shown by C. Ash & Sons, London, for reaching into deep cavities in molars and bicuspid. They are excellent in shape and are particularly useful in long crowned teeth.

The German branch house of C. Ash & Sons, have just turned out a new pedal-power chair which obviates the necessity for using oil or glycerine in raising or lowering the seat. It promises to become popular.

The whole of the February number of the *Dental Record*, London, was destroyed by fire a few days before the date of publication. The *Record* was issued very shortly afterwards with little change in the matter.

There is to be a large exhibit of dental appliances, furniture, instruments, etc., in connection with the Department of Education in the Centennial Exposition of the Ohio Valley and Central States during the coming summer.

While Dr. H. J. Ball, of Paris, was delivering the president's address before the Eastern Illinois Dental Society, at Champaign, Ill., on March 21, he was stricken with apoplexy and removed to his home in a critical condition.

The presence of several women members of the profession, and the large attendance of the students of the Dental Department of the University of Michigan, assisted in making the sessions of the Michigan Society very interesting.

A meeting of the dentists of Chicago is soon to be called, for the purpose of considering the litigation into which dentists are involved by the International Tooth-Crown company. It is intended to adopt ways and means of defense.

For Painful Neuralgia.—Antipyrin, gr. xv; cocaine hydrochlor gr. $\frac{3}{4}$; aqua dist. M. xv. Inject one-half the dose in the region of the seat of pain. This is recommended by Dr. A. C. Hugenschmidt, of Paris, who has used it with success.

The change in time of the next annual meeting of the Michigan State Dental Association should be remembered. The second Tuesday in May, 1889, instead of the last Tuesday in March as heretofore. The meeting will be held at Grand Rapids.

From the report of the Secretary of the Chicago Dental Society we glean the following statistics: The Society has (April 3, 1888) eighty members, and at ten meetings held during the year twenty-one papers were read; the average attendance was thirty-nine.

Dental ethics is peculiar but inexorable. A dentist in Pennsylvania advertised for a wife and got one worth \$50,000, without forfeiting his standing in the profession, while a Michigan dentist who advertised for customers was ejected from the state association.—*Exchange*.

Sozoiolol is a white crystalline substance freely soluble in water and alcohol. It contains iodine, carbolic acid and sulphur. It is free from odor and non-irritating. At present it takes high rank as a parasiticide and ought to become useful in dental practice as a microbe destroyer. Try it.

Dr. T. W. Brophy was elected president of the board of directors of the Chi-

icago College of Dental Surgery at the annual meeting held Tuesday, April 3, 1888, in place of Dr. James A. Swasey who declined re-election. Dr. E. F. Ingalls was elected a director vice Dr. W. H. Byford whose term had expired.

The plan of recording and tabulating facts in regard to the results of removal of the first permanent molars, suggested by Dr. C. S. Case of Jackson, Mich., is an excellent one, and all dentists who are interested enough to aid in presenting valuable statistics upon this subject should confer with Dr. Case at once.

The following officers were elected by the Michigan State Dental Society for the ensuing year: President, Dr. C. S. Case, Jackson; 1st vice-president, Dr. H. C. Corns, Detroit; 2nd vice-president, Dr. McNaughton, Grand Rapids; secretary, Dr. Wm. Cleland, Detroit; treasurer, Dr. H. K. Lathrop, jr., Detroit.

Mississippi Valley Association of Dental Surgeons—officers for the ensuing year: President, H. L. Moore; 1st vice-president, J. R. Callahan; 2nd vice-president, M. H. Fletcher; corresponding secretary, F. W. Sage; recording secretary, A. G. Rose; treasurer, Frank A. Hunter; executive committee, E. G. Betty, O. N. Heise, Wm. Conrad.

Witzel's cotton rolls for short operations on children's teeth are very neat and cheap and just the thing when napkins and the rubber dam can not be used for keeping a cavity dry. Cornelsen, of Paris, supplies them. They are covered with paper fiber and are very flexible, and just the right size for children's mouths from three to ten years of age.

At the fourth annual meeting of the Alumni Association of the Chicago College of Dental Surgery the following officers were elected to serve the ensuing year: Pres. C. P. Pruyn, D.D.S.; 1st vice-Pres. James Stewart, D.D.S.; 2d vice-Pres. T. A. Broadbent, D.D.S.; Secy. T. D. Gardner, D.D.S., Treas. E. Noyes, D.D.S., Class historian, F. W. Cady, D.D.S.

Mr. C. T. Kingzett, F.C.S., of London, has brought out a new (?) bactericide composed of peroxide of hydrogen and a solution of bichloride of mercury. Drs. Black and Harlan have each published formulæ of such an bactericide as long ago as 1885. See Ill. Transactions and current periodical literature for substantiation, as well as the columns of *THE DENTAL REVIEW*.

The necessity for further appropriations by the Legislature, for the Dental Department of the University of Michigan is very apparent, as there is not sufficient accommodation for so large a number of students, either in the operating room or mechanical laboratory, and an increased staff would not be amiss, the duties of the present corps of teachers being extremely arduous.

Dr. E. D. Swain, of Chicago, has just recovered from blood poisoning as a result of a slight wound on the hand from an excavator. A painful abscess formed which was accompanied with general symptoms of septicæmia. Such accidents are a constant menace to the dentist, and prompt preventive measures should always be taken, whenever the skin is broken by an instrument in use.

Dr. J. L. Gish of Jackson, Mich., is using the Detroit electric motor, obtaining power from an electric light plant and from the brief time spent in observing its workings, we should judge that the current obtained from that source, is far superior to the ordinary battery current. A rheostat is interposed so as to cut out about 100 ohms, and the wires are attached in such a way as to govern the force, by means of the regular pedal switch.

In a valedictory address delivered by Dr. A. H. Peck to his co-students of the Chicago College of Dental Surgery, recently, a good suggestion was thrown out by saying that Herodotus' views held more than 2,000 years ago might be heeded with much benefit by the dental profession of to-day, *i. e.* that as a general rule teeth which can not be removed with leaden forceps should not be extracted.

NORTH CAROLINA DENTAL ASSOCIATION.—The 14th annual meeting of the above association will be held at Raleigh, beginning on the second Tuesday (12th) June. The session will continue three days. An excellent programme has been arranged with interesting clinics as a special feature. A cordial invitation is extended to the profession.

H. C. HERRING, Sec'y, Concord.

M. Paul Dubois recommends the following for hypodermic injection in extracting teeth: Liquid vaseline, M. xlv; pure chloroform, M. iij.; Alkaloid cocaine gr. v. Place the cocaine in a bottle, add the chloroform and follow with the vaseline. Inject three or four minims towards the palatal aspect of the mouth near the tooth and about seven to nine minims towards the buccal. In from two to three minutes the tooth may be removed painlessly.

Dr. Geo. J. Ziegler in a very exhaustive paper on "the germicidal, antizymotic, antiseptic, antipyretic, disinfectant, and other medical properties and applications of nitrohydrochloric acid" says that the teeth should be protected when it is administered internally, unless the patient is edentulous. It might be used as a bleacher of pulpless teeth, but great care should be exercised to neutralize its effects with chalk water or a solution of borax at once.

At the annual meeting of the Chicago Dental Society held on Tuesday evening, April 3, 1888, the following named persons were elected officers for the ensuing term: President, J. A. Swasey; first vice-president, J. W. Wassall; second vice-president, W. B. Ames; recording secretary, C. N. Johnson; corresponding secretary, Louis Ottofy; treasurer, E. D. Swain; librarian, A. W. Harlan; executive committee, Edmund Noyes, Geo. H. Cushing, J. N. Crouse.

At the April meeting of the Chicago Dental Society a committee was appointed to secure signatures from dentists, memorializing Congress to remove the tariff duties from teeth, instruments, appliances and medicines used by dentists. In a short time a call will be issued for a mass meeting of dentists in Chicago to get at the necessary forms to further this object. It is hoped that other cities will follow suit, and also the various state and local societies throughout the country.

Very many persons in the various employments to which a large mass of the people are called, are compelled to permit the progress of the destruction of their teeth, simply because the employers will not give them the time to have them properly attended to. We have known of cases where the loss of entire sets of teeth was due principally to this case. The house which will grant its employes the necessary time (on the certificate of a dentist) will set a fitting example to employers everywhere.

The new electrical cavity and root dryer manufactured by F. Nehmer of Berlin, can be used by attaching the cord of a Webb mallet to the hard rubber connection when it is ready for use. The price is \$7.50. A stream of heated air up to about 250° Fahr. can be used in from three to five minutes after making the connection. Telschow of Berlin has gotten out one very like it, in effect, which may be worked with the foot as an ordinary bulb, similar to the one going with a pneumatic mallet.

This is said of the school of dentistry for the education of the colored at Nashville, Tenn.: "The school of dentistry is now closing the second session. There is a fine opening for colored dentists here, and this school is ambitious of furnishing facilities equal to any white dental college in the South. It has received the indorsement of the Southern Dental Association, and belongs to the American Association of Dental Faculties. Plans for a new building have been prepared, and it will be erected as soon as the necessary funds can be secured."

A meeting of the Illinois State Board of Dental Examiners will be held at the St. Charles Hotel, Cairo, Ill., on Monday, the 14th day of May, at 11 o'clock A. M., and continue in session for three days.

All parties desiring to obtain license to practice in the State or having other business that require the action of the Board will please govern themselves accordingly.

CHARLES R. E. KOCH,

Sec. State Board of Dental Ex.

Pure Platinum Amalgam.—Dr. W. B. Ames, of Chicago, has succeeded in making an amalgam of pure platinum. Fillings of it have not been sufficiently tested by time, but the working qualities are excellent, it having a leathery feeling under the instrument and being easily adaptable to cavity walls and possessing good molding qualities. It does not promise to make a hard filling but will be particularly useful as a caries preventor for buccal cavities, etc. Dr. Ames will speak more fully of this material in a paper to be read at the Illinois State Dental Society in May, 1888.

TAKE NOTICE.—All who will attend the meeting of the Ill. State Dental Society, at Cairo, May 8th. On every railroad it is necessary for purchaser of ticket to procure from the agent a certificate to the fact of purchase, otherwise no rebate will be allowed on return. Persons passing over different lines of road or branches of same road must procure certificates at each starting point. The C. M. & St. P. give rebates to Chicago, C. & N. W. to Chicago and Freeport, C. & R. I. to LaSalle, C. B. & Q., and C. & A. to St. Louis or East, St. Louis only. The I. C. road will carry attendants for one fare for round trip. G. N.

In his address to the second colored graduating class which has ever received the degree of D. D. S., Dr. J. P. Bailey says: "Arm yourselves with good books and journals and carry your head on your own shoulders. Dentistry taught to colored people is something new, and a great many people, both white and black, are watching the movement with a great deal of interest. Your people are proud of your every step toward advancement. The white people are glad to witness the progress of a people that was born and raised among them. You may rest assured, gentlemen, that you will find favor with every dentist in the land."

The programme of the Section on Dental and Oral Surgery of the American Medical Association as given by the *Journal of the Association* for April 7, is as follows: Address of the chairman, J. Taft. "Fracture of the superior maxilla and upper bones of the face: Treatment by the aid of the inter-dental splint, with two illustrations," by John S. Marshall, Chicago. "Etiology of irregularities of the teeth; development of the superior maxilla in the idiot, deaf and dumb, and blind and insane," by E. S. Talbot, Chicago. "Treatment of the irregularities of the teeth," by Geo. W. Keely, Oxford, Ohio. "Dentogeny," by W. C. Brittan, Detroit, Mich. Discussion on this paper will be opened by M. H. Fletcher, Cincinnati. "Heredity in its relation to the teeth," by A. O. Rawls, Lexington, Ky.

Discussion opened by A. E. Baldwin, Chicago. The Association will meet in Cincinnati, O., the second Tuesday in May and continue in session four days. Reduced R. R. rates; one and one-third fares from all points.

J. P. Miller, M. D., of Buckhannon, W. Va., in *The Journal of the American Medical Association* of March 24, 1888, in reporting a case of implantation in his own mouth, concludes by saying: "To the inquiry, then, whether I regard implantation as a success I must qualify my answer by the extent of the meaning of the inquirer, viz: 1st. Does it restore the symmetry of the teeth, gums and mouth? Yes; my tooth had been extracted about four years and the gum was badly shrunken. This did begin to fill up till about two months after the implantation, since which time it has filled out almost completely, and the tooth is same in size, color and general appearance as its fellow on opposite side of the mouth. 2nd. Can the tooth be used in mastication? Upon food of medium hardness and when insalivated and partially masticated, yes. 3rd. Is the tooth as good as the original one whose place it fills? No; and it will be remembered that I had it upon good dental authority that a better result than mine was, at two months after the operation, can not be had."

THE AMERICAN HERBAL OR MATERIA MEDICA. WHEREIN THE VIRTUES OF THE MINERAL, VEGETABLE, AND ANIMAL PRODUCTIONS OF NORTH AND SOUTH AMERICA ARE LAID OPEN, SO FAR AS THEY ARE KNOWN; AND THEIR USES IN THE PRACTICE OF PHYSIC AND SURGERY EXHIBITED.

Comprehending An account of a large number of New medical Discoveries and improvements, which are compiled from the best authorities, with much care and attention, and promulgated for the purpose of spreading medical light and information in America. By Samuel Stearns, LL. D. Solatium Afflictis, Walpole, (New Hampshire?) Printed by David Carlisle, For Thomas & Thomas, and the author. 1801.

This volume is a veritable curiosity, for the possession of which we are indebted to the friendly suggestions of Dr. A. H. Thompson. In a future issue we will give some extracts concerning drugs that are now in daily use by dentists.

We copy the following formulæ from among some of Dr. Black's medicines, in general use in the Dispensary of the Chicago College of Dental Surgery:

R

Iodoform,	-	-	-	parts	40
Coffee (roasted),	-	-	-	"	10
Vaseline,	-	-	-	"	50

Used as a root dressing.

R

Salicylic Acid,	-	-	-	parts	40
Vaseline,	-	-	-	"	60

Used as a root dressing.

R

Arsenious Acid,	-	-	parts	30
Morphia Sulphate,	-	-	"	10
Vaseline,	-	-	"	60

As a pulp devitalizer, or the following may be used.

R

Arsenious Acid,	-	-	parts	60
Morphia Sulphate,	-	-	"	40

"1, 2, 3 mixture." q. s. to make paste.

PROGRAMME OF THE ILLINOIS STATE DENTAL SOCIETY.—CAIRO, ILL., MAY 8 TO 11, 1888.

REPORTS, ESSAYS AND DISCUSSIONS.—Report of Committee on Dental Science and Literature; Dr. M. L. Hanaford, Rockford, chairman.—Report of Committee on Dental Art and Inventions; Dr. W. T. Magill, Rock Island chairman.—Dental Morphology and the Etiology of Irregularities; Dr. John J. R. Patrick, Belleville. Discussion opened by Dr. E. H. Angle, Minneapolis, Minn.—Dental Electrics, Dr. J. Rollo Knapp, New Orleans. Discussion opened by Dr. G. W. Whitfield, Evanston.—Some Main Points Touching the Conservative Treatment of Teeth whose Pulpas are nearly or quite Exposed; Dr. J. D. Moody, Mendota. Discussion opened by Dr. J. N. Crouse, Chicago.—What Shall We Do with Inflamed Pulpas? Dr. W. A. Johnston, Peoria. Discussion opened by Dr. A. W. Harlan, Chicago.—Prosthetic Dentistry; Some Difficult Cases and their Treatment; Dr. L. P. Haskell, Chicago. Discussion opened by Dr. Edgar D. Swain, Chicago.—The Rationale of Constructing and Attaching Artificial Crowns to Natural Roots of Teeth; Dr. John J. R. Patrick, Belleville. Discussion opened by Dr. Henry J. McKellops, St. Louis.—Making and Tempering Instruments; Dr. J. Frank Marriner, Ottawa. Discussion opened by Dr. George H. Cushing, Chicago.—Amalgam; Dr. W. B. Ames, Chicago. Discussion opened by Dr. Charles R. Taylor, Streator.

CLINICS—*Wednesday*.—Dr. Truman W. Brophy, Chicago; Approximal Gold Filling, Molar or Bicuspid, Using his Continuous Band Matrix.—Dr. W. N. Morrison, St. Louis; Regulating Appliances, Jack Screws Secured by Thin Platinum Bands, Springs, Wedges, etc.—Dr. E. H. Angle, Minneapolis, will have models and appliances representing his new methods of regulating.—Dr. John J. R. Patrick, Belleville; the means he uses for regulating teeth will be shown by charts and by a large model with movable teeth.—Dr. C. A. Kitchen, Rockford; Tin and Gold Filling.—Dr. T. L. Gilmer, Quincy; Telescopic Platinum and Gold Crown.—Dr. J. Austin Dunn; Medicinal Syringes.—Dr. James W. Cormany, Mt. Carroll; Gold Filling, using Electric Mallet.—Dr. A. E. Matteson, Chicago; Odds and Ends of Office Practice.—Dr. D. B. Freeman, Chicago; Labio Cervical Filling, using his Double Loop Clamp.—Dr. W. H. Taggart, Freeport; Corundum Point and Disk Maker.—*Thursday*.—Dr. J. Rollo Knapp, New Orleans; Will have a very interesting Clinic on Crown and Bridge Work.—Dr. A. W. Harlan, Chicago; Pyorrhoea Alveolaris, Etiology, Prognosis and Treatment.—Dr. John J. R. Patrick, Belleville; Will make and mount a gold crown for a member and will have his gold crown apparatus and outfit complete.—Dr. J. G. Reid, Chicago; Tin and Gold Approximal Filling.—Dr. H. H. Townsend, Pontiac; Approximal Gold Filling.—Dr. J. H. Woolley, Chicago; Root Canal Dryer.—Dr. K. B. Davis, Springfield; Gold Filling.—Dr. G. W. Whitfield, Evanston; Will demonstrate electrical conditions caused by different metals used in filling teeth.—Dr. E. D. Swain, Chicago; Gold Filling, Approximal.—Dr. C. P. Prunyn, Chicago; Cocaine in Minor Surgery and Extracting.

The executive committee beg leave to present this programme to the society and cordially invite all dentists of Illinois and neighboring states to be present. Another feature of the programme will be the "quiz box." This box will be opened at the close of each afternoon and evening session, and contain questions, which may have been placed in it in reference to the papers, discussions, clinics or practical questions on subjects not in the programme, upon which we wish the opinions and judgment of others. It is hoped that operators will be provided with all necessary

instruments, material, etc., that may be required. All members of our own society and others in attendance requiring operations embraced in the above list, or others of like character, are most earnestly requested to be present in the clinic rooms at an early hour. These operations should be among our members, if possible, for record and subsequent examination.

Railroad Rates. The Ill. Central will carry members on all its lines within the state at one fare for the round trip. The other roads will carry at one and one-third fare on the certificate plan.

As efforts will be made to secure a reduction of the duty now imposed on dental goods and instruments imported from Europe, the following table showing the duty *ad valorem* may be of interest :

Artificial teeth.....	20 per cent.
Dental rubber.....	25 "
Modelling composition.....	20 "
Cements.....	45 "
Copper.....	45 "
Amalgams.....	65 "
Forceps.....	45 "
Gutta perchas.....	35 "
All kinds of gold, platina, dental alloys, etc.....	45 "
Mercury.....	10 "
Surgical instruments and appliances.....	45 "
Scientific instruments.....	35 "
Files under 4 inch, per doz.....	35 cents.
" " " " pound.....	\$2.50.
" over " " doz.....	75 cents.
" " " " pound.....	\$2.50.
Corundum.....	45 per cent.
Lathes, tools, dental engines, chairs, gas apparati, burs, engine instruments, mouth mirrors, impression trays, vulcanizers and furnaces, water motors and all goods not specified but containing wood, metal or glass.....	45 "

Among these last items may be enumerated almost anything and everything that a dentist uses. This duty is paid on the *lowest wholesale price* and not on the cost of production. It is said that the cost of manufacturing twelve pairs of forceps in England costs \$13.50 and these forceps to the dealer are sold for \$16.50, the duty paid on these forceps is at the latter figure. The duty on gold wire and plate (18 K) is \$8.50 per ounce and as the cost of manufacture from the pure metal in England is but 6 cents per ounce, the enormous duty is paid by the dentist. Wolrah's gold cost \$12.00 per ounce to import.

Dentists and dealers in dental goods can buy *American* teeth in almost any part of the world for less money than right here at home, because American dental manufactures are exported without duty.

DR. J. L. WILLIAMS.

We clip the following from a late issue of a London daily newspaper :

DISCLAIMER.—AMERICAN DENTISTRY.—CROWN AND BRIDGE WORK.—Whereas it has come to my knowledge that a Company, lately registered in the name of the "American Dental Institute (Limited)," of which a Dr. Clifford and

other Messrs. Eskell are proprietors or managers, is publishing and disseminating in England a pamphlet, with illustrations of Crown and Bridge Work, parts of which are copied or extracted from a treatise previously issued by myself (published by Patterson & White, Philadelphia, 1886), the illustrations being cheap imitations of the illustrations in the same or other treatises or articles written by me.

And whereas I claim to have taken a leading part in the improvement of the process of Dental Surgery known as Crown and Bridge Work, and have devoted many of the best years of my life to the perfecting of that invention, and the honest and skillful performance of the necessary work connected therewith, which requires more than ordinary experience and skill.

And whereas, by reason of my said articles and treatises, my name became associated with Crown and Bridge Work and American Dentistry generally, not only in the United States, but also in the United Kingdom, and the said process (which is of great novelty and value) became widely known and appreciated by the public. And whereas I for a short time practised the specialty of Crown and Bridge Work at the before mentioned "Institute," managed by the said Mr. Clifford Eskell (and since registered as a Company), but being dissatisfied with the way in which the business was conducted very soon terminated my connection therewith.

And whereas the pamphlet published as aforesaid by the "American Dental Institute (Limited)" contains a large extract, taken verbatim from my said treatise, introduced by the words, "One of the Experts at the American Dental Institute, writes," etc.

And whereas, in consequence of my said treatise being widely read and known, the above statement is likely to lead persons to believe or infer that I am one of the so-called experts, associated with the said Dr. Clifford (Eskell) in the management of the "American Dental Institute," and I consider that such belief or inference is likely to act adversely to my reputation as a practitioner on the Crown and Bridge Work and American Dentistry generally.

Now I hereby Give Notice, that my connection with the "American Dental Institute" terminated on the 6th day of August, 1887, and that I have not since renewed, and that I have no intention of renewing, my connection with such Institute, and that the said extracts have been used without my knowledge or consent.

(Sd.) J. L. WILLIAMS, D.D.S., Member of the American Dental Association and of the Odontological Society of Philadelphia, 118, Harley Street, W., London, Eng.

Just as we are going to press with this number of the DENTAL REVIEW we receive this letter from Dr. W. A. Knowles of San Francisco, Cal., anent the article on "Dental Electrics" in our March issue by Dr. C. E. Kells, jr.:

SAN FRANCISCO, April 2, 1888.

Dear Sir:—The DENTAL REVIEW for March comes to hand with an article upon the subject of "Dental Electrics."

That system of motor and switch boards has been in practical use in San Francisco since July, 1886.

I have applied for and received a patent upon an engine such as you describe (No. 368,154) issued to me and assigned to E. Thompson, on August 9, 1887.

I enclose a circular describing my first engine. I have subsequently applied

for five additional patents on reversing engines, four of which have been allowed, and the fifth is pending.

Five of the patents are upon swinging bracket engines and the remaining one is upon an upright one. I exhibited two of the forms at the late International Medical Congress.

Any further information I shall be happy to furnish.

Yours respectfully,

W. A. KNOWLES, 118 Grant av.

THE CHINAMAN'S TEETH.

Dr. Talbot (of Chicago) says, speaking of irregularities, "There are never any irregularities in the teeth of the Chinese. The nomadic races also have perfectly developed teeth or arches. In new countries irregularities may result from intermarriage of different races—the crossing of racial peculiarities. The abuse of the teeth is due to depraved hygiene—not to civilization. The nearer the monkey, the further from man, the better the teeth; the less we depend upon them, the less perfect they become."—*Western Dental Journal*.

After quite an extensive examination of the teeth of the Chinese, I feel that the statement of Dr. Talbot is based upon anything except actual observation. A regular denture among them is more of a rarity than among the whites. In meeting them upon the street the various irregularities are constantly observed, and upon closer examination all the diseases common to the whites are found. I have observed all forms of irregularities, and am fully conscious that irregularity of the teeth is as prevalent with the Chinese as with any other race.

E. L. TOWNSEND, D.D.S.

237 South Spring street, Los Angeles, Cal.

We can confirm Dr. Townsend's observations.—EDITOR *Southern California Practitioner*.

The following item relating to medical practitioners may be studied with interest by those who think that the dental profession is overcrowded: "When statutes were passed between 1876 and 1885 by the Legislatures of several States regulating the practice of medicine and defining the requirements for candidates asking for licenses to practice medicine, the profession of the country and particularly of Illinois thought that the question, "What is to be done with all the doctors?" had been settled. At that time the medical colleges were turning out 4,444 graduates a year, and the increase of doctors was 5 per cent, while the population was growing but 2 per cent yearly. The colleges, in response to that movement, raised their requirements for graduation materially, and as a result the number of graduates dropped to about 3,000 last year. This was an apparently satisfactory solution of the troublesome question, but this year the colleges are graduating their old-time classes, and something else must be done, the doctors say. In Illinois there is likely to be an appeal to the next Legislature to pass a law requiring all candidates for licenses to practice medicine to go before the State Board of Health for examination, thus doing away with the present system of accepting diplomas from recognized colleges as prima facie evidence of ability to practice.

The system of State examinations has so far been adopted in Virginia, North Carolina, Alabama and Mississippi. The effect has been to reject a large percentage of men who have applied for licenses to practice. In one yearly examination in Virginia 25 per cent of the candidates were thrown out. In reality, however,

the result of the system in keeping out incompetent men from the profession is much greater. Large numbers are deterred from even trying to pass the ordeal, and many withdraw as soon as the Board's questions are presented to them. Seventy-five per cent of the queries must be answered correctly in all these States.

The Chicago medical colleges graduate a yearly average of 450 doctors. This is a greater number of medical graduates than in all the German universities in 1885. There were in the United States in 1880 83,436 doctors and in 1887 112,700. This gives this country 162 doctors to every 100,000 people. Then look at the leading European countries: For every 100,000 people Germany has thirty-two doctors, France twenty-nine, and England sixty. All far better educated than the average American graduate. There is no such demand for young doctors that they should be turned out by the hundred."

EASTERN ILLINOIS DENTAL SOCIETY.

The third annual meeting of the Eastern Illinois Dental Society was held at Champaign, on Tuesday, March 20th, 1888, continuing in session two days.

The President, Dr. H. J. Ball, called the society to order. After reading the minutes of the last regular meeting the society adjourned until one o'clock, at which time they re-convened when the President proceeded to read his annual address. On reaching the second page of his paper he was suddenly stricken with paralysis, which materially affected the proceedings. The Vice-President, Dr. S. A. Campbell took the chair, and the Secretary, F. D. Mann, completed the reading of the President's address.

Dr. J. D. Moody, of Mendota, then gave the society a very interesting clinic on filling with copper amalgam and after the operation the difference between the every day amalgam and copper amalgam was freely discussed by the members.

Dr. E. W. Sheriff, of Danville, then read a paper, "The Dentist as a Teacher," which caused quite a spirited discussion, after which Dr. M. L. Whitesides, of Paris, read a paper on "Prosthetic Dentistry." Discussion was opened by Dr. G. D. Sitherwood, of Bloomington, and was participated in by all the members.

The society then adjourned until half past seven to listen to the reading of Dr. Dwight's essay on "Treatment of Pulpless Teeth," which was well received. Meeting then adjourned to meet in Dr. Shafer's office, Wednesday morning, for holding clinics.

Wednesday morning session, nine thirty, A. M., clinics were performed as follows: Dr. Dwight, of Danville, gold crown; Dr. G. D. Sitherwood, of Bloomington, contour gold and platinum filling, using electric engine with Bonwill mallet; Dr. S. A. Campbell, Mattoon, root filling; Dr. J. E. Adams, Charleston, gold filling with matrix. Meeting then adjourned to meet at parlors of Doane House, at one thirty, P. M., for purpose of discussing clinics, and for electing officers for the ensuing year. The newly elected officers are: President, Dr. S. A. Campbell, Mattoon; vice-president, M. L. Whitesides, Paris; treasurer, C. R. Dwight, Danville; secretary, F. D. Mann, Paris; librarian, J. E. Adams, Charleston; executive committee, A. S. Waltz, chairman, Decatur; J. W. Reid, Paxton; D. N. Schafer, Champaign. The society voted thanks to the proprietor of the Doane House.

The society then adjourned to meet at Decatur on the third Tuesday in March, 1889.

Respectfully yours,

F. D. MANN, *Secretary.*

SOUTHERN ILLINOIS DENTAL SOCIETY — CENTRALIA.

Tuesday, April 10th, 1888.

Dr. J. J. Jennelle, of Cairo, President of the society, read the following address :

In accordance with a custom established in this and other societies of a similar nature, it becomes at this time my duty to offer for your consideration, such thoughts and reflections as have presented themselves to my mind as appropriate for the occasion. The task I undertake with great reluctance, realizing as I do, my inability to satisfy your expectations, or meet my own desires, remembering, too, the words of wisdom that fell from the lips of my predecessor one year ago. Another year has passed away and we are again assembled to compare notes, and share with each other the results of a twelve months' labor and investigation. I sometimes think the popular idea of such gatherings is, that they are more for relaxation and recreation than for improvement, but the more enlightened, thinking class in all communities will give us full credit for endeavors to extend our knowledge, not forgetting, perhaps, that as our stock of information is increased, so will they in turn be benefitted, and it is to this class we look for appreciation and support.

Great good is being accomplished by these periodical meetings. We find the matter of association is far reaching, not being confined to the learned professions, but spreading out to all sorts of bodies with all sorts of objects. However, the great fundamental object of nearly all is mutual improvement and advancement. The organization of this society was at the instance of, and is one of the sub-divisions of the grand old state association which takes front rank among the dental societies of the world. For the information of those present outside of the profession, I would say, we have in Illinois at the present time, the following societies : The State, the Chicago, the Odontological Society of Chicago, the Chicago Dental Club, the Odontographic Society of Chicago, the Northern, Southern, Eastern, Western and Central, making in all ten separate and distinct dental organizations, all meeting annually (except the Chicago societies which hold monthly meetings), and no two meeting at the same time. We challenge any state or profession to make a better showing.

If these distinct societies counted among their members none but those already members of the parent society, no special object would be gained. Certain qualifications are required before one can be admitted to the state society, but with us it is not so. The bars are all down. The barriers, as it were, are buried away. Any dentist of good moral character, living within the territory, who has \$1.00 and the disposition to fraternize, is not only entitled to, but welcome to membership in our ranks. The field is wide and the needs are many. The dentists of this end of the state need a more thorough acquaintance each with the other. They need a more thorough knowledge of the higher order of dentistry of the present time, and what will have a greater influence to bring about this state of things than to induce every dentist to join this or some other good society.

Until within the past year or two a large majority of the dentists of Southern Illinois have been drifting along in the grooves of their fathers or preceptors. Their cart-wheels had become accustomed to the ruts they had rolled through; and so have jogged along, up hill and down, bouncing here and there, occasion-

ally receiving damages, yet feeling in their aching bones they were in the right path, having traveled it too often to be mistaken. An easier conveyance and a less difficult road might have been constructed, saving time, strength and patience; but that was not to be thought of and, if kindly suggested by a more practical mind, would only cause a shrug of the shoulder or a lateral movement of the head.

They have found it hard to break loose from old habits. The ruts were so natural to fall into that it has been a struggle to vary their course and get out of them. They evidently have not liked dental societies, for has it not been a struggle to get this one well on its feet? Neither have dental colleges found favor among them. They have been satisfied to stick to the "trade" as they learned it, rejecting new theories and modern appliances as humbugs, and of no practical value. The time has now arrived, however, for a change. The infusions of new blood into the territory, fresh from the colleges, is fast bringing about a new order of things. As has been well stated by our executive committee in the announcement for this meeting, the time for questioning the value of society organization has passed. Opportunities are presented at these meetings of gaining more information in a few days than can be obtained from a year's reading of books and journals. The day has dawned upon us when the people, our patrons, have taken the matter in hand and demand of us that we devote more time to study and investigation, and less to the means of making the most money in the least possible time, without care as to their real interests.

They demand of us that we keep pace with the advancement constantly going on in the profession, and, I dare say, have branded as a drone that dentist who, in this day and age, thinks he can get along without identifying himself with some good society.

And now, gentlemen, let me congratulate you upon this organization at a time and in a field when and where so much missionary work is needed. Your executive committee has prepared for your consideration a most excellent programme, and when you are finally adjourned I hope the Secretary's minutes will show that each and every member has participated in the discussions and not that it has been confined to a few.

With these few remarks I assume the duties of President, trusting that in your deliberations naught but harmony and good feelings may prevail.

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CHICAGO, MAY 15, 1888.

No. 5.

ORIGINAL COMMUNICATIONS.

EMBRYOLOGY.*

BY EDGAR D. SWAIN, D. D. S., CHICAGO, ILL.

Embryology is defined as "The doctrine of the development of the embryo and foetus of animals," and "Embryo" as "The first rudiments of an organized being, or thing, whether animal or plant, as the young of an animal in the womb, or more specifically, before its parts are developed and it becomes a foetus." This definition then literally takes us back to the primordial facts, as to the cell and primordial cell at that.

So in classifying our studies on reproduction we have something like this, Embryology, Histology and Anatomy, Embryology commencing at Histology and taking us back, away back, into the unknown, back where not even chemistry, the microscope or the imaginative mind of man has been able to penetrate.

Consequently the science of Embryology contents itself with presenting to us a great many beautiful and interesting speculations prior to reaching the visible. Histology at this point, picks up the cell, and observers and writers immediately become imbued with confidence, theory changes to facts, consequently there are many valuable books, with Embryology on the title page, but Histology or Minute Anatomy from there to the end.

For centuries very many important facts bearing upon the phenomena of reproduction were known to anatomists and physiologists, but not till 1839, when Schleiden and Schwan had fully

*Read before the Chicago Dental Society, March 6, 1888.

established the doctrine of cells, was any very great advancement made. After this epoch investigators turned their attention to the labor of ascertaining the origin and metamorphoses of the cells in Embryo.

Up to this time nothing had been further from their conceptions, than the fact, now universal, that all animals, without exception, arise from eggs. Prior to this they had recognized three modes of generation, oviparous, viviparous and spontaneous generation. Investigation and a better knowledge has proved that the last-named mode of generation is not known in nature.

Dr. William Harvey, so far as I can learn, was the first to announce that there existed no essential difference in the mode of generation between oviparous and viviparous, but that all animals, even the viviparous, and man himself not excepted, are produced from ova.

A little later Linnæus promulgated the same idea, but at that time neither he or Harvey believed in the mamalian egg. Since then it has become known that the egg is common to all living beings, from the lowest radiate to the highest vertebrate, and that structure is at first identical in all, composed of the same primitive elements, and undergoing the same process of growth up to the time when it assumes the special character peculiar to its kind, the only real difference being that in the ovipara, the fecundated egg is discharged from the body of the female, and hatched when favorable circumstances prevail, while in the viviparous it is retained in the body of the female, until it develops into a perfect organism.

That portion of the egg which is of most interest to the Embryologist consists of a mere speck, while all else, the bulk is looked upon as mere accessories, this speck is denominated as the ovarian egg, and soon after becoming fertilized, appears as a bright transparent spot, but through the process of nutrition development proceeds, the spot grows, and there soon appears in it a smaller spot, more opaque than the surrounding matter, this is the germinal spot, which in time develops into the complete being of its kind, it would be very interesting, though hardly necessary here, to follow this process of development through all the changes to the end. I would however call your attention to some of the peculiarities possessed by this mere speck, especially

the force by which its destiny as a distinct individual is assured. This is the starting point, here lies dormant that force, which is to select the proper material for the commencement and completion of the future being. This one cell not only multiplies itself a thousand fold, but it also is the beginning of all the different cells which are later visible to the Histologist who studies the tissues of the completed being. It never builds other than of its own kind, makes no mistakes, and any departure from the true line is the result of outside disturbing influences. This is the great mystery called vitality, force, life, worshipped by the ancients, as a God ; it causes one cell to develop the oak, another the bird, another man, and it has handed down this peculiarity from generation to generation, for all the ages that have passed. The germ which produced the oak ages back has produced no other tree since, so of the bird and man. There may be something in evolution, but so far as my reading goes the argument is largely in favor of the immutability of species, and I believe it has been fully proven that when artificial conditions have produced modifications, if such conditions are removed there is always a relapse to the original form.

We are told that in the animal kingdom there exist one hundred thousand species, and about as many more in the vegetable kingdom, yet there are no mistakes ; the sown wheat never produces barley, the dog has been dog from the earliest. Crosses produce hybrids, but they in turn never perpetuate themselves.

Before the establishment of the cell theory, the growth of organism from the germ was not known to be an occurrence of the same nature as the growth of the fully formed individual. The anatomist could not understand how the individual could be formed from a structureless germ, and a theory gained credence that the embryo preëxisted in the ovum though invisible, and that the changes which occurred during incubation was the growth or expansion of what already existed, and even to this day it is not uncommon to hear it said, that the kernel of corn contains in miniature the stalk, leaf and full grown ear. We are taught that a mature cell consists of a nucleus, a cell body and cell wall, the last expression has been objected to by some, they claiming that no cell wall exists. This may be literally true, but it seems to me quite immaterial whether it be called a wall, a limit or a

boundary, it is the outside, and there exists a something if not a wall which prevents the fusion of a number of cells when in contact, into a homogeneous mass, practically therefore, a cell consists of a boundary and its contents, among which appears a round, or oval, or rod-like body called a nucleus, inside of which is one or more smaller specks called nucleoli. Cells draw their nourishment from the protoplasmic substance surrounding them in the egg from the body of surrounding material designated accessories, in the developed being the fluids, we may say circulating in the intercellular spaces.

Prof. Black will tell you that there are a great many different kinds of cells, with as many different functions, cells that build, and cells that tear down, cells that preserve and cells that destroy. He will tell you as I have that each of these different kinds of cells multiply their own kind, and also are the parents of or furnish the impetus for new species.

Now to make an essay upon this subject, to read before a society of this character, one should follow through all these changes until the germ of the organ which most interests us are reached and then follow with a treatise upon the development of the teeth.

I could quote from all the authors which you have yourselves become quite as familiar with as myself. That would only be a waste of time and possibly prevent very important and interesting discussions upon this or some other subject.

ROOT FILLING.*

BY G. W. ENTSMINGER, D.D.S., CARBONDALE, ILL.

Perfectly reliable assurances of success in root filling were wanting, but to-day we have men who have asserted that they *know* they can succeed in most operations undertaken in the line of root filling, and I think we have reason to cheer and to congratulate such an one. We should as a profession, as individuals, press toward that mark of high calling which means success in every particular.

*Read before the Southern Illinois Dental Society, April, 1888.

Root filling has been practiced for a great many years, and even in its primitive stage many pulpless teeth were saved, but as we look back and know the material generally used, we wonder that the operation was ever perpetuated. Thanks be to medicated cotton for the good it has done, and peaceful be its rest, but *is* it quietly resting? A faint answer says: No. I have good evidence that medicated cotton is being used to-day and with more or less success. A man who was recognized by the profession of his day, and by his patrons as one of the dentists, asked me to send him the first failure I could find, as a result of the use of medicated cotton in root filling, I almost wished I had one to send him, for I can not find any, though presumably if I practiced nearer to him I could accommodate him.

Root filling has had its ups and downs; it is up now, and unlike a few operations which were sprung on the profession as new departures it has stood the wars and tests, not having been ridden to death as a hobby and then dropped with disgust and shame. I will name one operation which was born about the same time, and when I do this I do it with all respect to the gentlemen who practiced it, for many are still in practice and are first-class men, but they don't make V shaped separations any more. Root filling has been studied and as a result to-day we can confidently fill almost any root canal, and make a successful and permanent operation. I will not go into detail on the mode or modes of filling for I know that all the gentlemen present are reading men and must of course have had much better directions for root filling than I can mention. I wish simply to plead for the salvation of some of the many pulpless teeth which are extracted simply because they are pulpless and perhaps abscessed. In so doing, I may provoke some discussion as to the mode of operating; the operation may be old or new, at any rate, it is a story that will bear repeating for all time, and no doubt it will stimulate us each and every one to be thorough in our work. The grand essential in root filling is thoroughness, we must thoroughly diagnose the case, have instruments perfectly adapted to the case in hand, and must cleanse the canals of all foreign substances, thoroughly disinfect and thoroughly fill. The materials to be used are optional, for I am aware that good and lasting fillings have been made with

half a dozen or more different materials, the most popular I believe is gutta-percha.

Another feature of root filling, one which has been the topic of comment for the past two or three years, is immediate root-filling. Much has been said in its favor, and some severe criticisms have been made, notwithstanding all there is room for the study of this subject.

One says: "fill all canals at one sitting." Another says: "medicate all canals for a period, at intervals." Another becomes more liberal and says only a certain class of patients can be counted as good subjects for immediate root filling, with this one we will more likely agree, this one also says that certain cases will not permit of the so-called heroic treatment. It requires careful observation to make a correct diagnosis as to the time of filling, and experience then becomes as usual our best teacher. With all the theory in existence and no practice if we attempt root filling, we need not be surprised if failures occur. The man who fills immediately and has success every time is a man of experience, hence we must be able to diagnose properly and then to sustain our diagnosis by the result of the operation. Unless we can do this we will be unable to prove that the practice is good, or is not good. Let us then, as a society, as a profession, as individuals, enter into a compact that from this time forward, we will operate and watch, we will teach and be taught, and no doubt wonders will yet appear to us, if not publicly, they surely will come privately.

In conclusion I wish to refer you to an article on "Immediate Root Filling," on page 715, in the November, 1887, number of the DENTAL REVIEW; if you have not the journal in your possession try to obtain it, you will not regret time and expense after carefully reading and rereading it.

Have you subscribed for the DENTAL REVIEW for 1888?

BICHLORIDE OF MERCURY IN DENTAL PRACTICE.*

BY LOUIS OTTOFY, D.D.S., CHICAGO, ILL.

The dividing line which is supposed to have existed between the animal and vegetable kingdoms, is being rapidly obliterated, indeed it is now almost beyond question that there is not sufficient difference to justify a division into separate kingdoms. As in our observations we descend to the lower classes of animals and plants, some of each are reached, which have so few and slightly distinguishing features, that they may be classified with either animals or plants, without in any marked degree violating the laws governing either species. To this vast class multitudes of minute living beings belong. The air and water is filled and peopled with them. In the lowest species of plants we find the various disease germs and spores, which have been erroneously designated as animalcules, but are now more properly known to be plants. The closer knowledge we now have of the life and habits of these germs, has entirely revolutionized medical science and practice. Diseases whose origin has been thus discovered, and diseases whose management has been beyond human control are now comparatively well understood. Undoubtedly the introduction of these germs into the system under various conditions and at various times lead to certain specific results. Nor is this less true of that portion of the human body more directly under the care of the dentist. It has been ascertained that the destruction of these germs and their exclusion from diseased parts, or indeed from the entire organism is followed by favorable changes and that usually a return to physiological conditions is the result. There are a number of chemicals and drugs which are said to be capable of bringing about these favorable results, and foremost among them is classed the bichloride of mercury.

The uses of this agent in dental practice are almost endless, it can be safely resorted to in all operations in which the result depends on the destruction of spores or microbes, which are now generally accepted to be instrumental in creating or maintaining diseased conditions. It can be used in solution of from one part in two hundred of water to one part in two thousand. A stronger

*Read before the Southern Illinois Dental Society, April, 1888.

solution than the former may not be safe, and weaker solutions than the latter are not supposed to be effective for the sterilization essential in dental surgery. The best method of having a stock solution on hand is to take 100 grains mercuric bichloride and add it to 1,000 parts of water at one time. This quantity requires the addition of alcohol, as the bichloride is not soluble in water to the extent of 100 in 1,000. This may be kept in a cool and dark place, and from it three solutions should be made, namely:

One of one part in 200
 " " " " " 500 and
 " " " " " 1,000,

in quantities regulated by the amount of each as may be required. The 200, 500 and 1,000 solutions are used only in small quantities, hence an ounce vial of each in the operating case is all that is necessary. To prepare them take from the pint bottle

Ten parts to 190 of water: makes one in 200
 " " " 490 " " " " 500 and
 " " " 990 " " " " 1,000.

A tumbler, bottle or small pitcher full of the latter should be made each day for the wash stand to be used as it is or it may be diluted with one half of water, making a 1 in 2,000 solution to be used for purposes mentioned hereafter.

The dose of bichloride of mercury is from 1-20 to $\frac{1}{4}$ of a grain. In the solution prepared the following will be the proportions:

Solution.	% of bichl. of mer.	In 100 drops	In 50 drops	In 10 drops
One in 200-----	$\frac{1}{2}$	$\frac{1}{2}$ grains	$\frac{1}{4}$ grains	$\frac{1}{20}$ grains
One in 500-----	$\frac{1}{5}$	$\frac{1}{5}$ grains	$\frac{1}{10}$ grains	$\frac{1}{50}$ grains
One in 1,000-----	$\frac{1}{10}$	$\frac{1}{10}$ grains	$\frac{1}{20}$ grains	$\frac{1}{100}$ grains
One in 2,000-----	$\frac{1}{20}$	$\frac{1}{20}$ grains	$\frac{1}{40}$ grains	$\frac{1}{200}$ grains

In opening into a cavity for any purpose whatever, and whether after or before the application of the rubber dam, the cavity having been dried, should be flooded with the 1 in 1,000 solution. This solution should be used for sterilizing exposed pulps and disinfecting cavities when they extend near to the pulp. It is the solution *par excellence* to be used in implantation, in it all instruments used in this operation should be dipped and

the hands, towels, syringes and anything else which may come in contact with the tooth or mouth should be moistened with it, for success in implantation depends mainly on perfect sterilization and healing of the parts by first intention. The foregoing table demonstrates that the minimum dose of the drug is contained in fifty drops of the solution, (1 in 1,000) hence no fear need be entertained in regard to the poisonous action of the drug, as that quantity would have to be swallowed or otherwise taken into the system in order to administer the minimum dose, and 250 drops to get the effect of the maximum dose.

The 1 in 200 and the 1 in 500 solutions are to be used carefully, the former contains the minimum dose of the salt in 10 drops and the latter in 50 drops. These solutions are used principally in root-canals and the quantity and strength to be used should be governed by the size of the dental foramen, as is generally indicated by the instrument used or by the age of the patient. In cases where so-called immediate root filling is practiced, the use of the bichloride of mercury is essential. Its rapid and certain action in destroying disease germs and its preservative quality are brought into prominence. In teeth where the dental foramen is large, the 1-5 per cent. solution (1 in 500) should be used cautiously, while the 1-10 per cent. solution (1 in 1,000) may be used with impunity. The $\frac{1}{2}$ per cent. solution (1 in 200) is used in root-canals whose foramina are small. But the principal use I have found for this solution is in painting those small irritable patches, which cause so much annoyance to those afflicted with them. These mucous plaques seem to have a certain course to run. I do not know to what causes they are due, or how they can be cured. They begin as a small irritating red spot, almost anywhere on the mucous membrane of the mouth or tongue, become gradually larger, generally about the one-twelfth of an inch in diameter, their surface is white or grey, and when in contact with the teeth, or when situated in folds of the mucous membrane are very tender and painful, on the third and fourth day, they are generally almost unbearable, and by the seventh or eighth, have entirely disappeared. By touching these spots three or four times a day with the 1 in 200 solution, their progress is generally checked, though in some cases merely improved, but in either case they are less painful and disagreeable.

The 1-20 per cent. (1 in 2,000) solution is used for washing the hands, spittoon and instruments, the latter are dipped in it and rapidly wiped and rubbed clean and when thus treated do not corrode, of the forceps generally only the beaks need thus be treated. In this strength it may also be used as a mouth-wash, half of the solution and half of listerine, adding a few drops of the extract of white rose, jockey club, Mary Stuart or any other sold in the drug stores. These extracts and the listerine combined, to some extent at least, disguise the disagreeable taste and astringent action of the salt. These solutions have to be used thus without a definite knowledge of their exact action, until it is definitely ascertained in what degree they are effective, and for what length of time they must be kept in contact with the parts to be acted on. For the present, at least, it is certain that no known substance has the properties of destroying parasites in so marked a degree as the bichloride of mercury. Its poisonous effect, and its tendency to corrode instruments is the principal objection to its use, both of these can, in a measure, be overcome, and with the exercise of good judgment, the use of the bichloride of mercury will prove to be of much benefit to those who have not used it, or who have resorted to its use to a limited extent only.

TWO PAPERS.

THE POSTHUMOUS WRITINGS OF DR. GEO. O. HOWARD, LATE OF HIGHLAND PARK, ILL.

DENTISTRY.—WHAT IS IT ?

Webster defines Dentistry as the art of cleaning, extracting, and filling the natural teeth, and the manufacturing of artificial ones. This may have been a good definition of dentistry when Webster compiled his dictionary, and in fact if we leave out the words "cleaning" and "filling" we have its meaning as it is now often understood by the people, and as it is practiced by many men calling themselves dentists.

The true meaning of dentistry now is, the knowledge of the structure, functions, diseases, and treatment of the dental organs;

of their relations to the other organs and parts of the system ; of scientific mechanism and artistic principles.

The skilled dentist of to-day must be to a certain extent a physician, surgeon, artist, mechanic and inventor. He must have a knowledge of physic because diseases of the dental organs arise from the derangement of other organs ; of surgery because there are many other operations in the oral cavity than the simple one of extracting a tooth ; of art because in the regulating and beautifying of misplaced natural teeth, and the insertion of artificial teeth depends the natural contour and beauty of the face ; of mechanics because much of dentistry requires a high degree of skill in several of the leading mechanical trades ; of invention because there are no two dental operations that are performed alike, each one requiring something different from the other, and often something that was never heard of before by the operator.

All of these qualifications are necessary for the successful practice of dentistry. This admitted, it will readily be seen that dentistry has made rapid and long strides onward since Webster formulated his definition of dentistry.

Dentistry has now reached that degree of perfection that it is not necessary to lose any tooth, no matter what its condition is, and in that respect it may be said to surpass physic and surgery in their special fields, for they do not save all. The dentist of to-day has no more need to extract a tooth simply because it aches than has the surgeon to amputate the finger on account of a felon.

Many people have the idea that their teeth can not be saved. They have been so informed by their dentist, or they may have repeatedly had teeth filled, only to have the fillings "drop out." For this latter discouragement there may be two causes, one or both may operate ; either the fillings were not perfectly inserted, or the teeth were not properly taken care of after being filled. Where there is ignorance or neglect on the part of the dentist or patient these failures are inevitable.

Dentistry by a thorough dentist is not a failure, providing his operations are cared for in respect to cleanliness by the patient. The "thorough dentist" will not dismiss his patient without giving instructions how to accomplish this continuously and emphasizing the importance of it.

AMALGAM.—WHAT IS IT ?

Amalgam was first used for filling decayed teeth in America about fifty years ago, and was composed of pure silver and mercury. Since then there have been added to this mixture, in different proportions, cadmium, tin, gold and platinum. Now there are a hundred or more different kinds manufactured, each claiming to be superior to all others.

Ever since its introduction amalgam has been unfavorably looked upon by many of the most enlightened men of the profession, and yet many of them have been compelled to use it more or less.

One objection is that it oxydizes in the tooth which gives it an unsightly appearance. Another is that in crystallizing or hardening from its paste form it shrinks, which leaves a space between it and the walls of the cavity it was intended to fill, thereby allowing destruction of the tooth to continue. But the greatest objection to it is the mercury it contains. This is indeed a serious matter and one that should be thoroughly studied. Mercury at the normal temperature of the body evaporates very readily. It is very persistent in this respect, in fact it is almost impossible to confine it to prevent evaporation. Some late experiments by Dr. E. S. Talbot of Chicago, demonstrates the fact that from a sixteen-year-old amalgam filling at 98° F. the normal heat of the body, there was sufficient mercury evaporated to destroy the lower forms of animal life. Persons having amalgam fillings in their mouths therefore are continually taking into their systems this vapor of mercury. Cases by the hundreds are recorded where many serious ailments seem to be traced to the inhaling of the vapor of mercury, from amalgam fillings, as no doubt thousands upon thousands of people are suffering more or less from this cause. Some individuals are more susceptible to the action of mercury than others and perhaps it is only the few of the many who are seriously affected. Be it so, who then is not indisposed to take the chances of being one of the few ?

CHILDREN'S TEETH, THEIR CARE AND PRESERVATION.*

BY C. C. CORBETT, D.D.S., EDWARDSVILLE, ILL.

We wish to consider two causes of early caries of the deciduous teeth; first, that pre-natal causes have a greater influence upon them than is generally supposed. This can not be questioned.

In former years, the pregnant woman was taught that it was necessary her diet should consist of the most substantial food, that she might become the mother of a strong, healthy child; now, while pre-natal culture is steadily advancing it is directed to the mental, to a much greater extent, than to the physical development.

We find a large percentage of mothers following the instructions of a book, entitled "Tokology," written by Alice B. Stockham, M. D., of which over 100,000 copies have been sold in the last five years, which teaches that the diet of the pregnant woman should consist principally of fruits, and that she should avoid every thing that goes to make up osseous structure, and the child's system should be built up from its own diet; consequently a large proportion of the children of to-day are being born with but very little lime-salts and phosphates in their organisms — principally a homogeneous mass, and I believe the time is fast approaching when a large majority of the children will be born under similar circumstances — unless the dental profession devise some means by which this may be obviated.

That the above condition has a worse effect upon the mammalian dentition, than upon the other osseous structures, I think, can not be doubted, when you consider that the bones and the permanent teeth have years in which to develop, and the diet of the child can be so directed as to partially supply them with the necessary lime-salts and phosphates. But the deciduous teeth having been deprived of these elements during foetal life and, considering their advanced stage of development at birth, the crowns of the temporary incisors being entirely formed, and those of the cuspids and molars following three months later, the texture of these teeth can be changed but little after this period, can we wonder that they are of a soft nature and easily attacked with decay.

* Read before the Southern Illinois Dental Society.

The second principal cause of caries is uncleanness of the teeth and mouth. A child should be taught to brush its teeth just as soon as it is old enough, and the sooner it forms this habit the better. This should be impressed upon its mind, for it is as essential as eating, or undressing at night, or dressing in the morning, and, when this habit is once thoroughly formed, the child will never depart from it; then, the good that has been accomplished, is of inestimable value, not only to the deciduous teeth, but throughout life.

A mother calls at your office with her four or five-year-old child; it has the idea — perhaps, from instinct, or more probably from hearing its elders tell of the suffering they have endured while in the dentist's chair — that it is going to be dreadfully hurt, and is frightened nearly to distraction. You come in from your operating room, — and right here, let me say, is where your skill is needed as much as at the chair — perhaps you are not feeling in the best of humor, and I fear the first thought that enters the minds of too many of our dentists is, that their time is too valuable to waste with this fretting child. To be sure, it may not be as pleasant as might be desired, and your remuneration may not be as much as your services are worth; but was money your sole object when you entered the dental profession, or did you have a nobler and higher purpose in mind, to do what good you could for suffering humanity? Unworthy the thought that dwells one moment on such sentiments!

The first step necessary is to gain the confidence of your little patient. You should approach it with a cheerful smile and a pleasant word and, if it is frightened, you can not spend ten minutes more profitably than in becoming acquainted; for if you do not gain its confidence and treat it with a great deal of care, being very particular never to practice any deception, it will for years hate a dental office, and only enter one as a last resort. And then, perhaps, you have done it a lifelong injury.

It is a fact, that the teeth under consideration are attacked with decay almost to an alarming extent, which we may be able in time to prevent. Yet we have this condition of affairs before us and we must be prepared to meet it.

The first thought that comes before us is, what kind of filling material to use. I would recommend in all cases, the use of

some kind of plastic filling. I think all fillings that require the use of the mallet in their insertion are uncalled for in this class of practice.

I use some good amalgam for the grinding surface of the molars, and on their proximal surfaces where the cavity extends up to the grinding surface; and when I have two cavities facing each other, and if the space between them is not too great, I fill the two as one cavity, rather than devitalize either one, or both of the teeth. I generally use gutta-percha in these kinds of cavities, and I have had better satisfaction from this practice than in trying to fill them separately, where I have not room for undercuts without wounding the pulp.

For all proximal cavities in the molars not touching the grinding surface, I use gutta percha, and for the anterior teeth Hill's stopping makes an excellent filling. In regard to devitalizing the deciduous teeth, I think it is very important that every dentist should be well informed as to the time the roots begin to absorb, especially those who are in the habit of using arsenic can not lay too much stress on this phase of the subject. Of course this is obscure, and the variance is great in different families, and in different constitutions; yet we ought to make what might be considered a safe approximation of the time, so as to know with some degree of certainty when to use this dangerous drug.

I think we would be comparatively safe in following the table given us by Prof. C. N. Pierce, in one of his recent essays. He estimates the retrograde metamorphosis as follows:—though he says there are many wide deviations,—“the roots of the central incisors begin to be absorbed when the child is about four years of age. The lateral incisors follow a few months later. The first deciduous molars begin about the sixth year, the second molars about the seventh, and the cuspids about the eighth year.”

There are a great many dentists who think they can not destroy the pulp of a tooth with any other drug than arsenic. For their benefit we might consider the above table relatively correct, and arsenic used after the time mentioned in the table should be regarded as dangerous. A dose sufficient to devitalize the pulp of a deciduous tooth, one sixtieth grain, which is very small, I think would not endanger a child's life; but it might bring about

such a condition at the apex of the root as to necessitate its extraction.

In most cases I have found that several applications of carbolic acid, or a solution of nitrate of silver have been sufficient for this purpose, so I do not resort to the use of arsenic, generally, in the treatment of the temporary teeth.

After we have destroyed the pulp of one of these teeth, it should be removed and the root filled just the same as for a permanent tooth, save where the child has reached the age given in the above table. Then great care should be taken not to crowd a lot of filling through the root. The pulp canal is generally large enough to admit of the introduction of a small instrument with a turned point, by means of which one can generally find just how much of the root has been absorbed, and then fill it accordingly. Then your operation should be recorded, with remarks, and the parents informed of the time your patient should return, which should be at least from four to six months earlier than would have been necessary had the tooth not been devitalized, for the purpose of watching the advancement of the permanent teeth.

In all cases where the deciduous teeth are dead when they are brought to you for treatment, and if the tooth has not been aching, and the opening into the root has been closed with decalcified dentine, it is pretty safe to fill without reopening the pulp canal. But if the root canal is open it should be thoroughly cleansed and disinfected, using as much care to avoid an abscess with these teeth as you do with their successors.

The extraction of the temporary teeth is unquestionably one of the most important subjects in practice. In fact we can not estimate it too highly.

The writer is of the opinion that too many of our dentists do a great injury to their patients by extracting their teeth too early, and young operators are especially liable to make this mistake:—for instance, a father brings his little daughter to you, age six years, four months. The inferior centrals have made their appearance on the palatal aspect. He is very anxious she shall have straight, pretty teeth, and places her in your hands. You, very properly, extract the temporary centrals, and instruct him to return with her in four months. At this time one central has

about reached its position in line, and the lateral on the same side has made its appearance. The other central is still considerably inside the arch. Then the young operator, and perhaps some older ones, thinks that these teeth must be straightened at all hazards, and extracts both temporary laterals; one to give room for the permanent lateral, and the other for the permanent central.

What is the result? The central comes into line and occupies nearly the entire space that should have been allotted to the lateral, which soon makes its appearance either posterior or anterior, to the temporary cuspid, which has to be extracted to give it room. The result is, in a few years the permanent cuspid has to erupt outside of the arch.

A temporary lateral should rarely be extracted to make room for a permanent central, and a temporary cuspid seldom, if ever, is to be extracted to make room for a permanent lateral. If there is a crowded condition, let it be for a year or two, and generally it will expand and develop the arch sufficiently to make room for the permanent teeth. There is one other tooth, which if it is extracted too early, will invariably bring about a crowded condition of the permanent teeth, and that is the temporary second molar, which will allow the first permanent molar to come forward and take the place of the second bicuspid.

This tooth,—the temporary molar—should be retained, if possible, until the child is eleven or twelve years of age.

We can not lay down any rigid rules for the extraction of these teeth, but we must rely upon our own judgment. Let us not be careless or neglectful, because upon the management of these teeth depends, to a great extent, the value of their successors.

NOTES OF A VACATION TRIP TO EUROPE.

BY THE EDITOR.

Europe is so near to the United States nowadays, that it is no uncommon occurrence for an American dentist to spend a brief holiday across the Atlantic in pursuit of health, pleasure or knowledge. The writer always tries to encompass the two latter as well as to recuperate a little from exhausting physical labor. His experiences from three previous journeys in 1878-81-86, have

been of much value in making contrasts of what was seen and heard in former days with the present visit of 1888. To those gentlemen who have never crossed the ocean a word or two of counsel may not be superfluous. All seasons of the year are not alike on the sea. A summer trip is generally most enjoyable, but at that period of the year most of the schools are closed, so far as lectures are concerned, and the amount of clinical work is not so great. Still much may be seen by an observant visitor. Our confrères in Europe generally choose the summer for their vacations and in consequence fewer of them are to be seen in their houses and offices from July until October.

The summer is the time when hotels, galleries and railway carriages are thronged with tourists, so that more comfort is to be obtained by the traveler in sight-seeing in the autumn, winter and spring months. It is possible to travel throughout Europe with only a knowledge of English, still many discomforts will stare the traveler in the face who has not a slight knowledge of French and German. Every one who contemplates a professional tour should study these languages as well as he may in order to make an intelligible use of his time. A short time spent in acquainting one's self with the geography of the countries about to be visited should be attended to before setting out on a journey. Guide books of the latest editions may be procured at home, before the start, and a little reading of them, with a study of the plans of cities, will save much time and not a little vexation. Baedeker's, Murray's, Cook's or Gazé's will suffice for the majority of vacation tourists. The Satchel Guide is also useful as a manufacturer of a skeleton route for travel. Second and third class tickets on the railways will do for most day journeys, and circular tickets will save a considerable expense almost anywhere in Europe. These are issued by the railways and regular tourist agents. The former are to be preferred. It is not advisable to travel in personally conducted parties, as the traveler loses more or less of his freedom in so journeying. Hotels are not usually high-priced if an understanding is had with the proprietor before the rooms are occupied. When a stay of short duration is to be made in any city, cabs should be employed to go from place to place as they will save much time in transit, when the tourist is unacquainted with the proper omnibus or street car routes. Cab fares are cheap every-

where in Europe compared with the extortions in the United States. A familiarity with the money systems of European countries is indispensable. In visiting places of interest, everything that is to be seen in the portion of the city that is worth seeing, should, if possible, be visited without going over the ground twice. Do not stop at hotels where it is necessary to take all of your meals, as this will cause a loss of much time or add to your expenses. Comfort and peace of mind is worth something, so it will be just as well to try and live as the natives do, and not try to transport your American ideas and desires onto foreign shores. Let the porters in the railway stations carry your luggage and fee them for it, and do likewise for the servants in hotels, churches, museums, galleries and elsewhere, as small gratuities do not amount to much, and you are relieved of many burdens by so doing. Observe the rules and regulations of steamboats, railways, hotels and other places that you visit and you will be comfortable. Do not argue about the greatness of your own country and make invidious comparisons, as these things are nauseous to intelligent people, but keep your eyes and ears open and make notes of what you see and hear. Courtesy is always appreciated everywhere, and impatience, loud blustering and other disagreeable methods of conducting yourself will meet with little favor. Be prepared for any emergency or accident and you will fare well in Italy or Holland as well as in Great Britain or Germany.

In calling on a brother dentist, choose the latter half of the day or afternoon as it will not interrupt his labors or engagements, and he will most likely be better pleased to see you and have more time to devote to you. The dental hospitals should be visited in the morning as a rule—say at ten or eleven o'clock—in Germany, however, the afternoon is best. Be on the lookout for novelties in the dental goods houses and in instrument shops or iron goods stores. Old books may be found almost everywhere. Everything that is new under the sun is not made in the United States. Subscribe for the dental journals in England, France and Germany and *read* them and you will profit much by so doing. Be sure to purchase all the late editions of standard works and every new book of merit, as soon as it is published. They do not cost much and the money so invested will return you good profit.

When you are spending an hour with a fellow practitioner, tell

him what you know, that may be new to him, instead of absorbing all without giving any return. If you have time, take it and attend the meetings of dental societies abroad, you will be welcome and may learn something. Don't think that you know it all, because other people in other climes, study, read, experiment and invent useful appliances just the same as we do at home. If you are an advertising dentist at home, stay there, or abandon all such methods and try and become one of an universal confraternity. Maintain a professional character by imparting your knowledge and have no secrets in science, but freely give your discoveries, in exchange for those already acquired. Do not, under the guise of a professional visitor, seek to sell something in the shape of a patent or give instruction in a new method of operating, or making bridge-work or something else which you bind the purchaser to keep secret. If you *have* patented anything have it placed on sale where all may buy, without the necessity of becoming *licensed* to make use of it, thereby creating a difference in the ranks of the profession, unequal for those who do or do not become the slaves of this sort of unprofessional monopoly. Be sure to read the foregoing, and in the next number of the DENTAL REVIEW the writer will tell what was seen in the various hospitals and elsewhere in Europe in 1888.

(*To be continued.*)

ANTISEPTICS AND GERMICIDES. *

By P. J. KESTER, D. D. S., CHICAGO, ILL.

That fermentation is due to the presence of low forms of vegetable life has long been known, and that the putrefactive and suppurative processes are analogous to fermentation is being accepted by nearly all pathologists.

That pyæmia, septicæmia and pus formations are due to the presence of micro-organisms either primarily or by the alkaloids of their waste products, seems to have been proven by actual experiment, and the researches of our most prominent dental pathologists have demonstrated to their own satisfaction, that nearly all

* Read before the Chicago Dental Society, May 1, 1888.

of the diseases that the dentist is called upon to combat, are due to the presence of bacteria.

Caries of the teeth, the most prevalent of all affections, is due to this cause.

Phagadenic Pericementitis (pyorrhœa alveolaris) is without doubt a product of a specific organism, suppuration, the formation of abscess, seems to have been proven to be but the manifestation of the presence of some variety of the staphylococci. Assuming then for the purposes of this paper that the microbe is the necessary and constantly present element in the production of disease, and particularly in all septic conditions, some general facts may be considered,

I. That they are not normally present, but are conveyed to fluids or tissues from without. (Such treatment as would exclude them would be the aseptic.)

II. Being alive, the conditions must be such as will enable them to perform their various physiological functions of alimentation, respiration, excretion, reproduction, etc., etc.

III. Any chemical substance which has the potency to prevent the development of bacteria of any kind, would be a true antiseptic—and

IV. Such agents as destroy the micro-organism are germicides.

Antiseptics may be divided into two classes,

I. Those agents which exert an inhibitory power on the microbe itself—these act by interfering with the vital energy or by so depressing the organism, that it can not perform its usual functions—*eg.*—heat and cold, alcohol, salt, borax, hydronaphthol, etc.

II. Substances which render the conditions unfavorable to the growth of the micro-organism by so changing the medium as to rob it of its food, as by the precipitation of albuminous matters from organic infusions. Example, sulphate of iron, sulphate of zinc, Zn Cl_2 , and such other agents which, by increasing the density of the liquid to such an extent that it is impossible for the organism to exist; sugar, salt, sulphate mg., etc., are some of the substances which owe their usefulness as antiseptics to this property.

All germicides are antiseptics *per se*, but all antiseptics are not germicides, many substances are powerfully antiseptic but have no germicidal power, *eg.*, iodoform, hydronaphthol; the latter ac-

According to the experiments of Dr. Fowler, of Brooklyn, had the power of arresting the development of the germs of fermentation in urine 1-6000 for months at a time, but by transferring them to normal urine they were developed with their usual rapidity. It is not the purpose of the essayist to introduce the whole list of antiseptics and germicides, nor the usual methods of practice but it may be of interest to notice briefly some of the more important ones.

Heat and cold have already been alluded to as antiseptic agents, but the nature of our work precludes the possibility of making use of them in practice, as investigators have shown that the change in the temperature necessary to prevent the development of, and to destroy the life of the microbe and its spores is very great. Koch and Wolfhügel, found that a temperature of 100 C. (212 F.) maintained for an hour and a half would destroy bacteria without spores, but to destroy the latter the temperature must be increased from 230 F. to 284 F. and continued for from one hour and a half to three hours, so that the claim made that heat is one of the best antiseptics, can not be made use of in dentistry. The perfect drying of a root by warmed air will not destroy germs or spores.

The following is a partial list of antiseptics and germicides taken from Dr. Sternberg's article in the Reference Hand Book of Medical Sciences:

Eminently antiseptic,	{	Mercuric Iodide	-	-	1-40000
		Silver Iodide	-	-	1-33000
		H ₂ O ₂	-	-	1-20000
		Mercuric Chloride	-	-	1-14300
		Silver Nitrate	-	-	1-12500
Very strongly antiseptic,	{	Chromic acid	-	-	1-5000
		Chlorine Gas	-	-	1-4000
		Oil of Mustard	-	-	1-3353
		Salicylic Acid	-	-	1-1000
Strongly antiseptic,	{	Zinc. Chloride	-	-	1-526
		Mineral Acids	-	-	1-500
		Carbolic Acid	-	-	1-333
		Creosote	-	-	1-200
Feebly antiseptic,	{	Arsenious Acid	-	-	1-182
		Boracic Acid	-	-	1-143
		Ferrous Sulphate	-	-	1-90
		Sodium Borate	-	-	1-14
		Alcohol	-	-	1-10
		Sodium Chloride	-	-	1-6

The proportions given in the table are the ones in which they are antiseptic, *i.e.*, they will prevent the development of germs, but a much higher per cent. is necessary to destroy them. Mercuric chloride, for instance, is antiseptic in 1-14300, but Koch found that a 1-1000 solution was required to destroy all bacteria with their spores. Hydrogen peroxide, which has an antiseptic power in 1-20000, fails as a germicide in much less than 1-125. It is not enough to know that a substance is a germicide, but it is necessary to know the exact amount required—xx gtt. of carbolic acid to a quart of water is not strong enough, notwithstanding an M.D., a professor in one of our numerous medical colleges, says “that that is about the proper mixture for an antiseptic wash.”

Standing very nearly at the head of the list of antiseptics is mercuric chloride which seems to possess many qualities which would recommend it to the dentist; it is cheap, non-irritating, odorless, soluble in water, and according to Koch, destroys all microbes and spores in solutions of 1-1000, and yet it has not proven as efficient in the hands of the dentist as might have been expected. This may be explained by the knowledge of the fact that when sublimate solution is brought into contact with albuminous fluids, an insoluble albuminate of mercury results (Laplace), which is entirely free from antiseptic properties. When it is remembered that albumen is found in the mouth, and roots of teeth in sufficient quantities to precipitate the Hg., we can readily see that our results would be negative.

Dr. E. Laplace found that by the addition of an acid to the solution this precipitation would not occur.

The acid which he found the most satisfactory was tartaric, in the following proportions:

R. Mercuric chloride	- -	1.
Tartaric acid	- - -	5.
Aqua dist.	- - - - -	1000.

This preparation he found destroyed the fetor in suppurating wounds in a very short time, and these were his conclusions:

I. Acid solutions of mercuric chloride exert the effects of the drug even in albuminous fluids.

II. That the acid increases its antiseptic powers so that weaker solutions are required.

III. The acid sublimate does not interfere with the employment of other measures, as caustics, iodoform, etc.

IV. It is non-irritating.

In the cases where I have employed this solution I have found that the foul odors of a septic root may be overcome by it in from five to ten minutes, which is certainly better than I have been able to do with the mercuric chloride solution, (1-1000) when used alone. Hydrogen per oxide has been alluded to and it is one of the most indispensable preparations that has been introduced to our profession. Dr. Harlan recommends equal parts H_2O_2 and $Hg\ Cl$, (1-1000) equal parts as a powerful germicide.

Carbolic acid is so well and favorably known that I need only mention it to say, that according to Sternberg an 8 % solution was necessary to destroy a pus micrococcus from an acute abscess, while a 5 per cent. solution failed.

Dr. Black's 1, 2, 3 mixture	{	Carbolic Acid,	-	-	1	
		Oil Wintergreen,				2
		Oil Sassafras,	-	-	3	

is a very pleasant antiseptic for rendering instruments aseptic, for root dressings, pyorrhœa alveolaris, etc. New agents are being discovered and introduced and recommended—hydronaphthol, iodol, soziodol, etc., but it's not within the scope of this paper to describe them, but I may say that it does not always depend so much on the antiseptic used as it does upon the intelligence of the operator.

When should antiseptics be used? The hands of the operator should be aseptic, *i. e.*, clean. No instrument should be permitted to enter the mouth, or a cavity in a tooth, or a root of a tooth, without first having been thoroughly disinfected. Every cavity should be flooded with a *germicide*, lest in your exploration you might force a nest of pathogenic bacteria, into an aseptic pulp, and by so doing inoculate it, causing inflammation, suppuration and death, or you may force a nest of microbes into an empty pulp chamber, which by their development would cause acute abscess.

This is the age of antiseptic surgery, and by the use of antiseptics and germicides operations are successfully performed every day, that were thought to be necessarily fatal before the days of Lister. Dental surgeons are saving ninety-nine per cent.

of a certain class of teeth (pulpless) that fifteen or twenty years ago were thought fit only for the forceps.

In conclusion, let me urge the necessity for the constant and persistent use of aseptic and antiseptic measures, for it is only by the study and application of them that we can hope to keep pace with the rapid strides in medical and surgical science.

AN IMPACTED TOOTH.

BY G. V. BLACK, M.D., D.D.S., CHICAGO, ILL.

A few days ago a lady presented herself at the Infirmary of the Chicago College of Dental Surgery for examination of a little tumor situated in the median line of the hard palate just a little back of the alveolar ridge; or we might say partly in the alveolar ridge. The teeth of the upper jaw had been extracted a year or more, and an artificial denture had been placed in the mouth which was supposed to have caused irritation at this point. After sundry trimmings this had been discarded and another tried, but the result was the same, this little tumor became so painful that the denture had to be discarded. The patient claimed to have sought the advice of sundry dentists and physicians without benefit.

The tissue over the tumor appeared normal, except that there was a slight glassy look. At the time it was not especially sensitive to light pressure, but heavy pressure was painful. The patient stated that it soon became very sensitive when she wore her artificial teeth.

For the purpose of arriving at a diagnosis I took a small exploring instrument and passed it through the soft parts in the center of the tumor. At a little distance it came against a hard body upon which it slipped. By changing the direction slightly so as to bring the point squarely against the hard body, I was enabled to tap it lightly with the point of my explorer and the sound elicited was of the tone that I should expect from enamel in such a situation. Both this and the slipping of the small point on the body indicated that I had to deal with the crown of an impacted tooth. I then inquired of the patient in regard to

the number of her permanent teeth. She stated that she had been told by dentists who had operated for her that she lacked one of the front teeth. She could not tell which one, but from her statements I concluded that it must have been a lateral incisor; and with this the form of the crown that I could reach with my explorer seemed to agree, though there was so little of it through the bone that nothing very definite could be made out. Yet the fact that the cuspid is much more frequently impacted, made the case doubtful.

I made a crucial incision through the soft parts lying over it and attempted to extract it with a pair of slender-beaked forceps, but the bone about it was so resistant that I failed to get the beaks fully onto the crown. I then took an elevator and cut and pried away the bone about it, after which I succeeded in removing it with the forceps, and found it to be a full-sized cuspid tooth with a full length root perfectly formed, except a short bend near the apex.

The principal point in this case is the matter of diagnosis. When will dentists learn to use exploring instruments freely and understandingly? No harm can result from thrusting a needle-like exploring instrument, or a small grooved needle into such a tumor as this, or indeed any other. And in case the sharp point strikes against a hard substance upon which it slips, and the sound elicited by tapping is of a higher tone than that from bone, the cause of the swelling can be nothing else than an impacted tooth. There is nothing else that could be in such a position that would have these qualities. In this case there was the corroboratory evidence of the history of a failure of the eruption of one tooth, but in many cases this history can not be obtained. The impacted tooth may be a supernumerary, or, in case the teeth have been extracted as in this instance, the patient may have no knowledge that there was a missing tooth. On the other hand, when the teeth are all in place but one, that one may have been extracted and the fact forgotten by the patient. Or, again, in a case presented in the Infirmary to-day my assistant, Dr. Peck, found a tooth deep in the tissues between the roots of the first molar and second bicuspid (upper jaw), the second molar was in place, and none of the wisdom teeth had yet erupted, the patient being only eighteen years old. In this case there could be no history of a missing tooth.

Some years ago I found and removed a wisdom tooth deeply seated in the ramus of the lower jaw that had caused an abscess opening on the face. In this case the patient declared that the missing tooth had been extracted several years before, and all of the other teeth were in place, which fact seemed to place his evidence in the matter beyond question. These facts show that in any such cases we must rely chiefly on our physical examination for diagnosis.

DENTISTRY IN RUSSIA.*

BY W. WITT, D.D.S., CHICAGO, ILL.

Like vegetation, prospering according to the climate, so dentistry is advanced or prosperous according to the country where it is practiced, and its condition depends much on the education of the people of each particular country. Dental education is in a decided embryonic state in Russia. The study of special dentistry is very limited, dental surgery and prothetic dentistry being the only branches to which any attention is given. Foreigners must live in the country three years before being admitted to any of the universities, and after having successfully passed the prescribed examinations they are admitted to practice.

Like in all countries the class of people ranges from the lowest to the highest, and in some cities it is the practice of dentists to have two operating rooms, one for the treatment of those who are unfortunately classed with the lower element, and the other operating room is reserved for the better classes. For filling materials the cements are in great favor for the anterior teeth and amalgam for the posterior, gold is used only to a limited extent, partly because of the cost and partly because the patients do not appreciate the skill and labor, and because but few operators possess the requisite skill.

The general fees for the treatment of pulp, or application of remedies is from 20 to 50 kopecks (14 to 36 cents); for cement fillings 2 rubles (\$1.44), amalgam filling 3 rubles (\$2.16), gold fillings average about 5 rubles (\$3.70) each.

*Read before the Odontographic Society of Chicago.

The most remunerative branch of dentistry is the prothetic. The fees for this class of work are: A vulcanite plate with one tooth, or a case of repairing 3 rubles (\$2.16), and each additional tooth 2 rubles (\$1.44). Gold is not often used as a base for artificial teeth and when resorted to the fee is generally 5 rubles (\$3.70) per tooth. In some places the fee for vulcanite is as low as 1 ruble (72 cents) per tooth, and the same for cases of repairing.

I have seen cases, where, for instance, twenty artificial teeth were needed, but on determining the cost it was ascertained that the patient did not have sufficient money, and only the number for which the patient could pay were put on the plates. It is a common practice to leave the roots of broken teeth in the jaws, firm roots are permitted to remain almost invariably and loose ones are very often permitted to remain.

The obtaining of suitable instruments and dental materials is connected with many unpleasant annoyances, aside from the heavy duty imposed upon them, it is often difficult to get some classes of manufacture over the boundary. Ash & Sons, who have a branch house at St. Petersburg, find it often necessary to have some one at the custom house to insure the safe transmission of their goods from Germany to Russia.

I may add that possibly the use of tin, amalgam, and cement is in reality the most serviceable filling material which can be resorted to, to save the teeth of the majority of the Russians, the peasants live almost entirely on the starchy non-nitrogenized principles of food, use but small quantities of meat, consequently the teeth are soft and crumbling, and undoubtedly are much more certainly saved by the plastic filling materials.

THE Louisville Female High School is most admirably adapted for the use of the dentists next summer. There are clinic rooms, committee rooms, exhibit rooms and two large halls for the separate meetings of the two associations. It is situated on a quiet street where there is no heavy traffic, and is lighted and ventilated very perfectly. We have seen the building and know whereof we affirm. The hotels are all within a radius of six or seven blocks, and nearly every line of street cars pass within a block or two of the school, so that every dentist who is disinclined to walk may ride if he so desires. Come one and all.

PROCEEDINGS OF SOCIETIES.

MICHIGAN STATE DENTAL ASSOCIATION.

The thirty-third annual meeting of this society was held at Ann Arbor, March 20, 21 and 22, 1888, President J. A. Robinson in the chair.

The first scientific subject was presented to the society at the Tuesday evening session in the form of a lecture by Dr. W. H. Dorrance on "Cast Metal Dentures." The speaker opened the subject by reading from "Harris" a portion of the chapter on "Cheoplastic Methods and the Mounting of Artificial Teeth," where the use of alloys were mentioned, and then spoke of the different combination of metals which had been used in the making of dentures and their defects, ascribing the corrosion of some of the compounds used to the presence of antimony and bismuth, for which he saw no benefit to be gained in the formation of the alloy.

Speaking of the alloys in general use, Reese's, Watt's and Weston's, the various qualities and objections to each were mentioned. Tin is a suitable metal as a base, but alone it has not the stiffness requisite, by the addition, however, of 15 per cent of silver the metal will flow more sharply and strength is gained, though it is not free from that objection to all cast metal dentures, viz: liability to fracture if bent two or three times. It was for the purpose of illustrating his method of overcoming this difficulty that he had agreed to speak on the subject at the present meeting, and as it was one he had been teaching to the students in the college for some years, it might not be new to all present. By the use of tinned piano wire, about No. 20 gauge, bent to conform to the line of the alveolar ridge, and the ends projecting in such a manner as to be held in place by the investment during the pouring of the metal, previously filing the wire nearly through at a point a little below the surface of the base plate, so that upon the removal of the denture from the investment, the wire could be twisted off, and the small opening left by the application of heat to the spot, completely covered by the alloy, and thus preventing the exposure of the wire at any point, he believed the desired re-

sult had been obtained. Dr. Dorrance illustrated his method by casts and models in all the different stages of the process, and described the various steps and the care to be observed, in detail, also the method of repairing a denture, together with a description of the casting of a plate for the attachment of teeth with rubber.

Dr. J. A. Robinson made a few remarks on the subject and exhibited a denture worn by himself, in which Robinson's fibrous metal had been used, instead of the usual alloys.

Dr. C. S. Case read a short article on his plan for securing valuable statistics relating to results obtained, by the extraction or retention of the first permanent molar, and exhibited a number of models that he had secured during the past few years. The following is a copy of the circular letter he intends sending out, together with a prepared blank for tabulating cases, to the dentists who are interested in obtaining such data. It explains his idea clearly:

DEAR DOCTOR:—The question, "What shall be done with the first permanent molars at the ages of from seven to ten years whose conditions are such as to foreshadow early loss?" is one of so much importance, and about which authorities so widely differ, we have decided to solicit your aid in an endeavor to collect data that will place the subject upon a more scientific basis.

You are asked to make plaster models, upper and lower (and if possible the facial expression), of every questionable case that comes under your hands. In those cases where you have decided to save the said molars you will please mark upon the model the size and shape of the fillings; but if you have thought best to extract them please replant them in the models in their proper position or preserve them in dilute alcohol.

To these preparations you will append the enclosed blank, filled out, and bring or send it to our next annual meeting, where they will be properly systematized and labelled for future comparison.

During each subsequent year you will endeavor to make models of the same cases, and also add to your list new ones.

It is believed that when sufficient time has elapsed so that comparisons can be made, ranging over a number of years, our collection will prove of great value in establishing some system of treatment that will be more universally accepted as the correct one.

Dr. Taft speaking on the subject showed the advantages to be gained by such investigation, and the immense value such a series

of cases recorded would be to the profession, as the changes that take place can only be recognized by such a process. It would also show what part the third molar played, where the first had been extracted. And an intelligent view of this matter can only be obtained by giving it considerable attention and by experiment.

A committee, with Dr. Case as chairman was then appointed to take steps for securing the statistics required.

WEDNESDAY MORNING.

On motion, Dr. Land's name was dropped from the list of members at his own request.

Dr. Carroll of Meadville, Pa., then occupied the remainder of the time demonstrating his method of making Cast Aluminum Plates, after which the subject was discussed by Drs. Harroun, Dorrance and Robinson.

The afternoon was devoted to practical demonstrations by Drs. Ames and Land, the former showing his method of treating pyorrhœa alveolaris by electrolysis, and the latter the making of porcelain fillings.

The evening session was occupied by Dr. Martin, who discoursed on the subject "Diseases outside of the mouth affecting the oral structures," the following being a brief summary of the lecture.

Teeth begin to germinate early in foetal life, as early as the seventh or eighth week, and at the eleventh week the germs for the deciduous teeth are all formed, and from this time until the full development changes occur continually. The principal law of development is that as long as the parts are normal all parts develop in the same degree, but if there is some delay, some part is defective. The arrest of development will produce, at one time cleft palate, at another hare lip, or it may extend over and cause both cleft palate and hare lip, at still other times the mental faculties may be impaired. Maternal impressions may affect either the nervous system or physical organization. The first may result in impairment of the mental faculties, the latter affects the body, and thus the teeth. Diseases of the mother also affect the foetus, as syphilis, etc. After birth, such diseases as scarlet fever, small pox, measles, or diseases affecting the alimentary tract, will influence the integrity of the teeth. If the teeth are

not nourished by reason of a lowered state of vitality, bad results follow, and whatever affects the teeth affects the system in general.

Diseases of the intestinal tract affect the oral structures in a marked degree, thus affections of the mucous membrane of the alimentary canal, also affect the mucous membrane of the mouth, and the results of these diseases are found in the mouth.

Disturbances at the time of eruption are often attributed to this process, yet the cause may lie somewhere else. From the time of birth changes are taking place all along the alimentary canal, and while at first the digestive organs can only assimilate liquid food, when the teeth appear, the alimentary tract has become prepared for the digestion of solids. A child though unconsciously violating nature's laws, receives punishment the same as older persons, and care should be exercised in the proper feeding of infants. Disturbances of the alimentary canal at this period are attributed to the uneasiness peculiar to the time of eruption. At this time the child has a hot, dry skin, fever, diarrhoea, vomiting, or it may die from convulsions, and yet the eruption of the teeth plays only a very small part in causing this.

I stated that the results of diseases of the alimentary canal are found in the mouth, as for instance, the appearance of the tongue as a means of diagnosis. The chemical action of the secretions of the mouth, also play an important part. Turgid gums is often given as a cause for systemic disturbance, and considered local, when in reality it is a general condition with local manifestation. Tartar is a local manifestation, but is the result of a general condition. The saliva may be normal or abnormal, in normal action it is alkaline, and never acid except in pathological conditions. The buccal secretions differ from the saliva in reaction being acid, and in long fasting the oral secretions may be acid in character from the excess of the buccal secretions. In analysis the test should be made as soon as possible, not after five or six hours after obtaining, as decomposition takes place very rapidly. The bad odor of tartar is due to the presence of decomposing animal matter, enclosed with more solid substances.

The saliva of infants is very similar to that of adults, only more alkaline, but when it becomes acid the effect is very much more marked. In a great many cases of summer complaint in

children, if the secretions of the mouth are examined their character will be found to be acid. When the acid is excessive it is absorbed into the system, causing greater stimulus of the secretory glands. The alimentary canal will stand about two-tenths of one per cent. of hydrochloric acid. This hydrochloric acid is not the product of decomposition, but it is butyric, lactic and other acids that irritate the alimentary canal. An over-stimulus of the buccal glands may result in their breaking down, and the presence of pus, blood, etc. Stomatitis is the great cause of acid secretion. The first stage is dryness; the second, over secretion of glands; third, pus; fourth, more destruction of tissue by ulceration and breaking down of structures. In stomatitis, the secretions are normal to a certain point, then they change from over stimulus. Catarrh has a marked effect upon the glands, wherever they may be, and all secretions from the throat in catarrh are abnormal.

Acid secretions may produce ulcerations or the development of parasites upon the mucous membrane. Weak alkalies kill these parasites.

Disease of the salivary glands also cause an increase in the acid secretions by the flow of alkaline saliva being diminished. One salivary gland may be diseased and secrete abnormal saliva while another may be normal.

Rheumatism, or gout, produces over secretion of acid in the mouth, and this may be due to change in the condition of the liver. It is conceded that when there is a surplus of acid in the system it is due to non-elimination, and not to over production.

Indigestion or dyspepsia probably is the most potent factor in producing evil results on the teeth. When food, taken into the stomach, at a proper temperature, does not digest, it will undergo other changes, and fermentation is the result, producing an acid, and this means an acid secretion in the mouth.

Fermentation produces gases, the stomach becomes distended, and may press upon the diaphragm, and in consequence press upon the various blood vessels carrying and returning blood to and from the head. The arteries by reason of their coats are less compressible than the veins, and the result is a congestion of the whole head or parts of it.

Acid secretions affect epithelial structure and the dental organs being formed from sub-epithelium are easily affected by this condition.

Years ago it was said "a tooth for a child," meaning that every time a female went through the process of gestation a tooth was lost. Modern authors say two — four teeth for a child.

To treat effectually, get at the cause; if due to indigestion, treat for that, etc. Alkaline mouth washes will be useless. Hence the necessity for a thorough medical knowledge to the progressive dentist.

No discussion was indulged in on this paper.

THURSDAY MORNING.

Dr. E. C. Moore, of Detroit, read a paper on Porcelain Crowns, which was profusely illustrated with a large number of drawings to explain his ideas clearly. Evidently the essayist had devoted so much time to the preparation of the drawings that his paper suffered for lack of careful preparation. The illustrations were so good, however, that very few explanations were necessary. The paper was not discussed.

In the afternoon, papers were read by Dr. J. L. Gish, of Jackson, on Oral Antisepsis, and Dr. C. S. Case, on Artificial Vela and Obturators. After which followed the election of officers.

The evening was devoted to Dr. Vaughan, who read a paper on Germs as Producers of Disease.

After which the society adjourned to meet at Grand Rapids in May, 1889.

SOUTHERN ILLINOIS DENTAL SOCIETY.

REPORTED FOR THE DENTAL REVIEW BY E. NOYES, D.D.S.

The Southern Illinois Dental Society held an interesting and successful meeting at Centralia, April 10th and 11th. About thirty members and visitors were present at the opening. The secretary's report showed twenty-four active and two honorary members, six active members were added at the first session, and several others afterward. The welcome by the mayor of Cen-

tralia, reports of officers and committees, the president's address and the discussion of it, consumed the morning session. It was a timely and interesting paper. *

The president's address received hearty support and commendation in a lively discussion by Drs. C. B. Rohland, W. J. A. De Lancey, R. C. Morris, E. Noyes, L. Betts, T. W. Prichett, E. D. Swain, D. W. McConnell, J. G. Dickson, J. T. Cummins, C. R. Taylor, J. L. McQuown, G. North and Mayor Rexford.

The afternoon of each day, from 1.30 to 4 o'clock was devoted to clinics. The supervisor, Dr. Geo. M. O'Hara, of Springfield, was not present, and Dr. Prichett, a member of the executive committee, did his work. Several of the members had taken the trouble to bring their operating chairs from distant places, and much careful preparation had evidently been made beforehand. One or two of the clinics failed by the absence of the patients who had made appointments and who did not send notice so that substitutes might be found.

At the afternoon session Dr. DeLancey asked that the president's address be given to the daily paper for publication, and the request was granted. Dr. C. C. Corbett then read a paper on "The Care and Preservation of Children's Teeth" (see page 237), which was discussed as follows:

Dr. Gustavus North, of Iowa, who had been assigned to open the discussion on children's teeth, said the time to build up tooth structure is from beginning of embryonal life, not after the children come into the hands of the dentist. The effect of eruptive and contagious diseases is often marked upon the permanent teeth, and children should be protected if possible against contagion, from the third to the fifth year especially. Children often come, in an excitable condition, worn out with pain or frightened by what they have heard about the dentist. Care should be taken not to add to their alarm by anything they can see about the office (instruments, etc., lying exposed to view), or by anything in our speech or manner. If there are things about the office to attract or amuse them it is well. He dissented from the advice given in the paper to fill adjoining proximal cavities in temporary molars with one filling bridged across the space. Teeth are individual organs, and it is better to fill them singly.

* The President's address was published in the DENTAL REVIEW for April.

Dr. McMillen dissented from the assertion of the paper, that pregnant women should eat food that will nourish the osseous system especially. We often hear complaints of constipation, aching back and depression of spirits during gestation, and we shall find that these accompany the diet which has special reference to making osseous tissue. Substitute abundance of fruit, oat-meal, graham flour, etc., and there will be immediate improvement.

Dr. Dickson said the teeth of pregnant women usually suffer severely, which looks as if they do need osseous or bone forming food.

Dr. Rohland said the paper is full of good sound, orthodox doctrine. There is great necessity for saving temporary teeth, because the children need them, but they are to be retained but a few years and operations upon them should have reference to that fact. We should never hurt children if it is possible to avoid it, and we generally can. We would rather the first fillings made should not stay a month than to hurt the child. The oftener children come to the office the better, if we treat them well. He often fills two proximal cavities with one filling, though if they can be made separately it is well. If pulps become exposed it is very unfortunate, but don't hurt the child if possible to avoid it. Mothers should clean their babies' teeth as soon as they have any, and long before they can begin to do it for themselves, using a brush with water, the addition of chalk is good, and if there are sour eructations, add a little soda.

Dr. De Lancey said he was the last man in the world to do anything for a child the first time it comes, unless absolutely necessary. He usually gave some instructions to the mother, and had them come again. He found it hard enough to get mothers to keep their own teeth respectably clean without saying too much about having them clean their babies' teeth.

Dr. Cheadle likes to avoid extracting for children if possible, because it frightens and repels them, and sometimes avoided it by slipping a section of rubber tubing up to the neck of the tooth to be removed.

Dr. McConnell does not believe that a child's tooth will ever decay except from congenital causes. Can any man say that any deciduous teeth have been prevented from decay by cleaning?

Dr. Rohland does not believe there was ever a set of teeth

congenitally imperfect or otherwise, that would decay if they were kept perfectly clean. It is the difficulty of doing it that makes the trouble.

Dr. Taylor does not believe that the American people usually lack a proper diet for nourishment of osseous structures. The difficulty is chiefly in hygienic conditions. He spoke of the relations of temporary and permanent teeth with reference to premature extracting of temporary ones. The arch of the permanent teeth is larger than the temporary one, and if the incoming teeth are deprived of the support of the adjacent temporary teeth the pressure of the lip may force the permanent teeth back to the line of the smaller arch occupied by the temporary teeth and cause crowding, and illustrated his idea by a drawing on the blackboard. Children's teeth should be filled because there is no time of life when teeth are more needed. Hundreds of children are chronic dyspeptics, caused largely by not using their teeth, and this because they are decayed and painful to use.

Dr. Morrison said he wished to make every operation and adopt every mode of treatment that will keep temporary teeth in their places till the end of their proper duration. No tooth, either temporary or permanent, should ever be removed if any force is required to do it. Everything should be done that may tend to enlarge or expand the arch and make room enough for the permanent teeth. It is better to fill the space between temporary teeth, keeping food out and tending to separate them, than to cut V-shaped spaces which may allow them to approach closer together. The retention of the roots of a temporary molar between the bicuspid, or the bicuspid and molar, sometimes does more good than harm by forcing the teeth apart and expanding the arch. He preferred amalgam for filling the shallow proximal cavities between temporary molars, but often had to refill.

Dr. Swain.—I congratulate the society on having a young man who can write a paper good enough to bring out such an interesting discussion as we have had this afternoon and evening. The subject of children's teeth is apt to get treated in societies a good deal as it sometimes is in our offices. We would rather not discuss it very much. The discussion in regard to nourishment has gone over old ground. People who are supposed to suffer for

lack of phosphates excrete them in large amounts. Oat meal and coarse foods, etc., are very useful, not because we might otherwise lack enough phosphates and carbonates, but because we need coarse and laxative food for distention of the stomach and intestines, and hard food for proper exercise of the teeth and jaws.

A French writer not very long ago advanced a theory, which was severely criticised, that mothers in the intervals between pregnancies accumulate osseous material, stored upon the surfaces and in the substance of the bones, which is removed during pregnancy for the support of the foetus. Some objections have been made to the essayist's plan of bridging fillings between temporary molars. He is fully justified in what he said by the belief and practice of some of the best men in the country. I was glad to see Dr. Morrison grow enthusiastic on the subject of retaining temporary teeth by every possible means of treatment rather than extract them. I heartily agree to what he said.

Dr. G. A. McMillen, of Alton, read a short voluntary paper on the use of soft gold foil, in which he described its peculiar qualities and the very rapid operating that may be done with it in cavities having entire circumscribing walls, by using compact cylinders. He said the gold could be packed into a medium or large grinding surface cavity in from five to eight minutes (and he made good the assertion in a clinic by putting the gold into one in seven minutes). He referred particularly to the limitations of its use, and disclaimed any attempt to use it in places not suitable, its place being in grinding surface and buccal cavities and the cervical portion of proximal ones.

Dr. C. B. Tatman, of Mount Vernon, said that it is not absolutely necessary that cavities for these cylinder fillings should have any undercuts if the walls are straight and true. He sometimes passes the cylinders very rapidly through the flame so as to anneal the outside layer and the ends enough to make the addition of cohesive gold possible. He referred to the difference in effect upon gold between mallet force and hand pressure, the former being more intense and the effect chiefly spent upon the portion immediately under the point, while hand pressure is slower and allows its effects to be distributed through the mass, if non-cohesive gold is used. Fillings that would require one or

two hours with cohesive pellets, can be inserted in ten or fifteen minutes, by wedging in non-cohesive cylinders by hand pressure and surface malleting.

Dr. Noyes regretted to hear very much said about making operations in five or ten minutes, for we can not safely indulge ourselves in the ambition to see how quickly we can make fillings. Good operations can not be made without painstaking, exactness and thoroughness in every detail, and such rapid work can only be done safely when there is a rather unusual combination of favorable circumstances. The method described is undoubtedly a good one, only its limitations should be strictly observed. Many grinding surface cavities are too much undercut, or have too weak a wall at some point, or are of too unequal depth and irregular borders to be filled to best advantage in that way, unless the method is somewhat modified; and many buccal and labial cavities are too broad and shallow.

Dr. Dickson said it is always dangerous to try to condense too large masses of gold at once. It can not be done with certainty. When cavities are very much undercut these may be filled and the floor made level with phosphate, and so an excellent preparation, be made for the soft gold cylinders, as described by Dr. McMillen.

Dr. Canine said he had practiced almost a quarter of a century, but had never made entire fillings of non-cohesive gold. If so very much time can be saved by its use; it is time we learned how to do it.

Dr. C. R. Taylor was asked to open a discussion on amalgam, the essay or lecture on that subject having failed by the absence of the essayist on account of sickness.

Dr. Taylor said, success in all callings and all operations depends upon thoroughness. It is more due to the operator than the material. There is no trouble in finding amalgam fillings that have done service for twenty or thirty years, and the same may be said of cohesive or non-cohesive gold, and even gutta-percha fillings occasionally last many years. He believed amalgams have virtues and uses that no other materials possess. The material has its limitations and defects also, and we must not ride a hobby about it, or if we do, should remember that a hobby is only a wooden horse after all. The filings are usually not thoroughly enough amalgamated. If there are hard grains under the burn-

isher in packing or finishing it shows that it has not been well enough mixed or rubbed. At one stage of the amalgam question it was urged to use it very dry and crumbly, and then the edges were sometimes like sand and crumbled. If too much mercury is used it squeezes out at edges and surface in packing and washes away, so that the filling falls away from the margins. The most perfect mixing will bring no mercury to the surface in packing, but some surplus can be absorbed with dry filings or with tin, but all the portion containing the added tin should afterward be scraped off.

One reason for the good qualities of copper amalgam may be the perfect amalgamation obtained by the method of its preparation.

Dr. Dickson said he tried sometimes to avoid the shrinkage and spheroiding of amalgam by enclosing a lump of tin in the interior of the plug, and Dr. Rohland said he did the same thing, especially in buccal cavities, and large grinding surface cavities, by enclosing a piece of an old amalgam plug, packing all round it with fresh amalgam.

On Wednesday morning Dr. Finch read a paper on filling with sponge or crystal gold, which he had used almost exclusively since 1867. He described its qualities and the manipulation of it, and expressed the belief that good work can be done with it much more rapidly than with foil, which is of importance to a country practitioner who finds it impossible to confine his practice by appointments, and may happen to have several people from a distance who must have their teeth filled the same day.

Dr. Taylor said: I am a country dentist, and when I began practice Dr. Marriner said to me: "Don't work for everybody the first time they come in, but insist on making appointments, though you are a 'country dentist.'" I have found that we can control our patients for appointments if we insist upon it. Success depends upon taking time to do work thoroughly.

Dr. Noyes said that crystal gold is to be regarded as one of the forms of strictly cohesive gold, and requires the same minuteness and accuracy of detail in its working, which precludes the possibility of very rapid operating with it if thorough work is done. A man who has used it exclusively for twenty years can doubtless work it much faster than he could cohesive foil, but the same

may be said conversely of the foil worker. If rapid work is to be done with gold it must be by the use of non-cohesive gold (in places suitable for it).

Dr. Conrad said the trouble with sponge gold is the danger that it will be insufficiently packed, the pieces being used too large to be thoroughly and uniformly consolidated.

Dr. J. T. Cummins, of Golconda, read a paper on the "Artistic Adaptation of Artificial Dentures," which was very well received and was followed by an interesting discussion. The following are a few notes taken during the reading. He referred to the necessity that partial sets of artificial teeth should be made very carefully to correspond to the remaining natural ones, and this requires that a very large stock of teeth be kept on hand or else that free use be made of the mails to send for the teeth for individual cases. He prefers plain teeth in most cases on account of their facility of adaptation and arrangement, their strength, durability and facility of repair. The inner cusps of teeth should strike a trifle harder than the outer, and the force of mastication should be allowed to come outside of the alveolar ridge, and the posterior molars should be a trifle shorter than the others. It is better that the cusps of the molars and bicuspids should not be ground.

Artistic perception is indispensable to the restoration of form and expression of features. Natural appearances may be simulated by varying the color of individual teeth in a set, or exposing a neck somewhere, inserting a gold filling, etc., etc.

Dr. Penney differed from the essayist in one point, believing the outer cusps of teeth in full sets should touch first instead of inner ones. All the teeth should touch except the front ones and the last molars.

Dr. Dickson said the arrangement of the articulation should depend on the relation of the jaws.

Dr. Conrad has been using fifty to one of plain teeth as compared with gum teeth. The material of the plate is important. There is a tendency to return to gold plates. Aluminum will probably prove very useful. Plates of any kind should be less and less used, as the better care of teeth more and more prevents their loss, and the usefulness of crown and bridge work removes about all excuse for "cleaning out" mouths in the old fashion.

Dr. Prichett said, at the time of life when patients oftenest want artificial sets of teeth, say forty, fifty and sixty years, age has made its mark, complexions have failed, and an entire change has taken place in the appearance of the teeth. Full sets are nearly all of them made for much younger persons. He often breaks the continuity of even similarity by varying the form, color or arrangement of some of the teeth. He often uses central incisors unmatched, either in size or color, and so make up sets from odd teeth, instead of using the full sets as sent out by the manufacturers.

Dr. Eames said no set of natural teeth are uniform in color, the cuspids are darker than the others, and there are often other differences. The centrals are usually lighter than the bicuspid, etc. As to the articulation, what objection is there to have both inner and outer cusps strike together accurately? With artificial teeth the grinding motion of the jaws can not be used to so great an extent as naturally, but the chief dependence must be upon a chopping motion. A very great improvement is needed generally, in the articulation and arrangement of teeth.

In a naturally formed and symmetrical arch, the point between the front teeth and the external corners of the last molars, will enclose an equilateral triangle and if a line is drawn between the points of the cuspids and two perpendiculars run from the same point to the base of the triangle they will enclose a square. The plumpers over the eye teeth are often made too far back and the fullness too uniform. They should be prominent only at the extreme upper edge of the plate, and the tooth itself should furnish all the fullness lower down.

Dr. Eames described the construction of a combination plate of black and pink rubber so as to require no filing, by molding the wax accurately and smoothly to the form desired and covering the model, and all the wax surface representing the finished surface of the plate, with heavy tin foil burnished smooth. The pink for the external surface must be put on in one piece and the packing be carefully done, the flask parted at the line of the black rim at the edge of the plate, or the black rubber may be thrust through the pink. He described the stiffening of trial plates by a wire across the heel, which will prevent them from bending, when bitten upon, so as to disturb the proper articulation and which often makes

necessary an unexpected amount of grinding after the plates are finished.

In the discussion of clinics, on Wednesday afternoon, Dr. Conrad spoke of the uses of the Herbst pain obtunder (sulphuric acid, cocaine and sulphuric ether). He has found it very valuable in the treatment of soft, sensitive teeth, in the treatment of the pockets of pyorrhœa alveolaris, etc. It is claimed by some that it renders soft teeth less liable to a recurrence of caries. It may be laid over the mouths of obscure buccal roots in upper molars, and after a time it will soften the secondary deposits to such a degree as to render access to them easy. It will also help the removal of hard tartar from loose teeth.

Your reporter was obliged to leave for home before the reading of the papers by J. G. Dickson, of Carmi, on "Dental Hygiene," one on "Root Filling" by G. W. Entsminger, of Carbondale, and the one on "Bichloride of Mercury in Dental Practice" by Louis Ottogy, of Chicago.

The members of the society gave their visitors most cordial treatment, and expressed their thanks for the help received from them. The visitors were gratified to find a society so well able to take care of itself. They felt exceedingly well repaid for coming, and not over-confident that they had been able to give more than they had received. The utmost harmony and good feeling appeared to prevail throughout.

CLINICS REPORTED BY DR. T. W. PRICHETT.

TUESDAY.

Dr. F. S. Wilson, of Vandalia, exhibited models of his process of attaching teeth to swaged aluminum plates with rubber (by etching and depressions in palâte surface and with holes.)

Dr. Canine filled second right bicuspid, mesial, with cohesive gold, contouring to proper shape.

Dr. Morrison filled for Dr. McMillen the posterior root of left lower first molar with gold wire and oxychloride, finding the pulp alive in anterior root capped with oxychloride, crown to be filled subsequently with other material. Dr. Morrison also implanted a right superior central incisor in the mouth of Dr. Wm. Stoker, of Centralia.

Dr. Stephen Coyle had on exhibition his set of cast iron dies,

case hardened, for stamping and forming grinding surface portions of gold crowns. They were used on Wednesday by Dr. Wick in constructing a crown for Dr. Morris.

WEDNESDAY.

Dr. McMillen filled for Mr. Noleman, of Centralia, a right lower molar, grinding surface, with non-cohesive gold cylinders, a good sized filling, the insertion of the gold requiring less than ten minutes, this operation was done without rubber dam, dryness not being considered essential.

Dr. C. R. Taylor, of Streator, made a filling of copper amalgam (his own make, by Weagant's process), in a grinding surface cavity in upper molar for same person.

Dr. Morrison made an immediate root filling in left upper lateral incisor, treated with wood creosote, and filled with gold wire packed with oxychloride for upper portion, remainder filled with oxychloride packed in with mineral wool, all done without rubber dam.

Dr. Wick, of St. Louis, crowned a left upper bicuspid without antagonist), for Dr. Morris of Olney.

Dr. Fisher, of St. Louis, filled left upper first bicuspid, distal and grinding surface, for Mr. Pfaff, with cohesive gold.

Dr. Harper, of St. Louis, illustrated Dr. C. C. Carroll's method of casting aluminum base-plates, making a perfect casting.

Dr. McMillen filled for Dr. Morris a cavity in worn end of central incisor with non-cohesive gold cylinders. This was not a good case, tooth being too frail.

The under-mentioned gentlemen in Louisville have organized themselves into a committee to look out for the welfare and comfort of the members of the Southern and American Dental Associations at their next regular meeting to be held in Louisville, Tuesday, August 28, 1888. The National Association of Faculties and the Association of Dental Examiners will meet at the same time and place. The committee is composed of C. G. Edwards, chairman; C. E. Dunn, F. Peabody, J. F. Canine, J. Hooper, B. O. Doyle, J. W. Wallace, J. H. Baldwin, J. B. Alexander, H. D. Eggers, B. G. Rees, W. W. Barnes and H. B. Tileston, secretary. Any one of the above will secure hotel accommodations for visitors.

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POST-GRADUATE DENTISTRY IN ENGLAND.

The Dental Hospital of London and the National Dental Hospital have each issued announcements of a post-graduate course in dental surgery. Below will be found the announcement of the Dental Hospital of London:

A dental post-graduate course will be held at the Dental Hospital of London, Leicester Square, commencing April 24th, terminating May 7th. Fee for the course £5 5s. The course will be open (subject to the approval of the Committee) to all registered Dental and Medical practitioners.

PROVISIONAL PROGRAMME.

Tuesday, April 24. 2:30 p. m. Gold and Tin Fillings, Mr. R. H. Woodhouse. 3:0 p. m. The Application of the Rubber Dam and other methods of excluding Saliva, Mr. L. Matheson.

Wednesday, April 25th. 2:30 p. m. Herbst Fillings, Mr. Storer Bennett. 3:0 p. m. Preparation of approximal Cavities and the use of Separators (Cocaine), Mr. W. Hern.

Thursday, April 26th. 2:30 p. m. Gold Filling with the Electric Mallet (foot connection), Mr. E. Lloyd Williams. 3.0 p. m. Alveolar Abscess, Mr. Arthur Underwood.

Friday, April 27th. 2:30 p. m. Gold Filling (hand pressure). Mr. L. Matheson. 3:0 p. m. Treatment of Pulp, Mr. S. J. Hutchinson.

Saturday, April 28th. 2:30 p. m. Cohesive Gold Fillings, various Mallets, Mr. W. Hern. 3.0 p. m. Treatment of Pulp-

less Teeth—(a) Dry Dressings. (b) Immediate Root Fillings
Mr. E. Lloyd Williams.

Monday, April 30th. 2.30 p. m. Artificial Crowning, Dr. J. Walker. 3.0 p. m. The Properties of Metals, Alloys, and Amalgams, Professor Huntingdon.

Tuesday, May 1st. 2.30 p. m. Gold Fillings, Approximal Cavities, Mr. R. H. Woodhouse. 3.0 p. m. Pyorrhœa Alveolaris, Mr. Storer Bennett.

Wednesday, May 2nd. 2.30 p. m. Non-cohesive Gold Fillings, Mr. D. Hepburn. 3.0 p. m. Palladium and other Plastic Fillings, and the use of Matrices, Mr. L. Matheson.

Thursday, May 3rd. 2.30 p. m. Contour Gold Fillings, Mr. E. Lloyd Williams. 3.0 p. m. The Treatment of the First Permanent Molar, Mr. S. J. Hutchinson.

Friday, May 4th. 2.30 p. m. Non-cohesive and Cohesive Gold in Combination, Mr. R. H. Woodhouse. 3.0 p. m. Obturators and Impression Taking, Dr. J. Walker.

Saturday, May 5th. 2.30 p. m. Gold Fillings with the Pneumatic and Engine Mallets, Mr. Storer Bennett. 3.0 p. m. Treatment of Fractured Maxillæ, Mr. W. Hern.

Monday, May 7th. 2.30 p. m. Gold and other Fillings, by various Operators.

“National Dental College, Great Portland Street, Post-Graduate course in Dentistry. A course of Lectures and demonstrations will be given at the National Dental College, commencing in the first week of June. The meetings will be held at five o'clock p. m. Fee for the course three guineas; or half a guinea for any single lecture or demonstration. Details will be announced shortly.” The above announcements mark a new departure, in dental advancement in Great Britain. It should be remembered that there are not more than a dozen dental societies in the United Kingdom and until very recently public clinics have not been given in connection with the sessions. We congratulate our brethren on their evident determination to acquaint each other with their distinctive methods of operating, and it will be beneficial also for the opportunity it will afford many registered dentists, who have little or no skill in operative dental surgery, to become acquainted with methods that have hitherto been to them as a sealed book. The outlook from this date appears most prom-

ising for a rapid development of operative skill, on natural teeth and the surgery of the mouth. Mechanical dentistry and mechanical dentists generally are quite on a par now, with the advancements in other countries. Clinical teaching and clinics generally should be encouraged both at home and abroad.

INTERNATIONAL DENTAL CONGRESS.

The sentiments of an editorial on this subject, as expressed in the March number of the REVIEW, have received unfavorable comment from sources, whence hearty and universal indorsement should have been extended.

The *Journal of the American Medical Association* of April 7, 1888, in criticizing the statements made by the REVIEW, has either misinterpreted or misunderstood the position which the REVIEW holds in relation to this subject. The early convocation of an International Dental Congress is of such paramount importance to the dental profession, that any misconception in regard to it, should be promptly corrected. The movement to hold an International Dental Congress is not a recent one. In August, 1885, on motion of Dr. A. M. Dudley, the Secretary of the Dental Section of the late Congress, a committee was appointed by the American Dental Association to consider the feasibility of holding an International Dental Congress. At various times since, the desire to hold such a Congress has been expressed and the advantages and disadvantages discussed here as well as abroad. In this country last year the movement was held in abeyance for no other reason than that no interference with the Section on Dental and Oral Surgery was intended, yet in Europe activity did not cease. On July 3, 1887, the executive committee of the general Association of Dentists in France, decided to convene an International Congress of Dentists, and soon thereafter, issued a call for this purpose, suggesting that the Congress meet in 1889, at Paris; no special time was specified and the call was issued before it had been determined when or where the Tenth International Medical Congress would be held; hence, at least to the French, no sinister motives can be imputed.

From these statements it may be readily seen, that the sugges-

tion to hold a dental congress is voiced elsewhere, and that the assertion made in the REVIEW, that a dental congress to be held next year was not intended to interfere with any section of the medical congress to be held in 1890, was made in good faith and was prompted by worthy motives; hence the opinion of the editor of *The Journal of the American Medical Association*, expressed in these words: "It is difficult to see how the editor of the REVIEW could more directly and certainly interfere with the organization of an efficient and successful dental section of the International Medical Congress in Berlin, than by persisting in his scheme of forestalling it, by a separate international dental congress, the year preceding at Paris," hence this opinion, we repeat, is based, to say the least, on a lack of acquaintance with the literary activity of the dental profession.

Any person, who will read the editorial on the International Dental Congress in the REVIEW of March 15, 1888, with an unbiased mind can discover no direct or indirect opposition to or forestalling of any section of the Tenth International Medical Congress. The question of the "permanent recognition as a legitimate department of the great field of medicine and surgery" is neither contested nor is it at issue. The holding of a dental congress does not necessarily imply that members of it are antagonistic to general medicine, or that they would withhold their "influence for perfecting the unity of all the departments" of medicine; at any rate there are no more reasons for entertaining this view when relating to dentistry, than when ophthalmology, hygiene, demography or otology are considered. It is certainly presumptuous to oppose the holding of an International Dental Congress on the part of the editor of *The Journal of the American Medical Association* while the proposition of holding an international ophthalmological congress is duly noted in the pages of *The Journal*.* We are not aware of any opposition having been made to the international congress of hygiene and demography which was held at Vienna, September 25 to October 2, 1887, or to the international congress of otology to be held in Brussels, September 10 to 16, 1888.

These branches are certainly as fully allied to general medicine, (and some of them are duly represented by *regular* sections

* Page 527, April 28, 1888.

in the Medical Congress) as dentistry is. It would seem more appropriate to oppose the holding of international congresses on such well recognized and older specialties as hygiene, ophthalmology and otology, than to oppose a congress of dentists. If it is proper for some of these specialties to hold separate international congresses, why is it not proper for other (dental) specialists? If the dental and oral section of the congress of 1890 will be interfered with by an International Dental Congress, why will not the section on ophthalmology be interfered with by a separate congress? Why will not the section on otology be interfered with by a separate congress?

Have not dentists the same privileges coequal with ophthalmologists and otologists? If, indeed, there is any impropriety, it certainly is not in holding a dental congress, for dentistry had been practiced independently, dental societies, colleges and literature had existed before the first International Medical Congress ever met.

We disagree most emphatically from the views of the editor of *The Journal of the A. M. A.* when he says that "there is no interest, social, scientific or practical, to be promoted by an exclusively International Dental Congress in Paris next year, that could not be more efficiently promoted by a section of the International Medical Congress the following year at Berlin." There *are* interests, social, scientific and practical, why a dental congress should be held, why it should be held at Paris, and why it should be held in 1889. (Our personal preference would be for the first International Dental Congress to be held in America.) In the first place, American dentists have not hitherto shown a disposition to cross the Atlantic under any and all pretexts. The dental section of the congress of 1881 was comparatively well attended, it being the first one organized, in 1884, however, the interest shown was so slight that the section was abandoned, and what less could have been done in 1887 at Washington, than the establishing of a section of dental and oral surgery? If in Great Britain a dental section was appropriate, how could the congress have met without one on the stamping grounds of Harris, Hayden, Flagg, McQuillen, Parmly and Webb, within a few hours distance of the first organized dental college in the world? Are there any of the conditions existing to make the

dental section of the Berlin congress as successful as either the London or Washington congress, and are the possible results more favorable than those of Copenhagen? There is no certainty whether a dental section in the Berlin congress will be established or not, and dentists are by medical journals urged not to convene a dental congress, because possibly a dental section may be organized in 1890, and dentists may attend it. Aside from the inducements offered by attending a congress composed entirely of dentists, there are other reasons for selecting the time and place as suggested. The American Dental Society of Europe meets in Paris during the month of September, 1889, and the *grande fête* in the way of the Paris Exposition is promised as an additional inducement to undertake the journey. Hence, those who go will find a social feature and a scientific interest connected with the meeting of the American Dental Society of Europe — one of the best on the continent — which will be valuable indeed. For the promotion of practical interests a purely dental meeting is always superior to any other.

The last clause of the criticism relating to the published proceedings has not a shadow of justification in fact. The published proceedings of an international dental congress will reach the reading dentists in every part of the globe, in one or another of the seven languages in which the dental journals are printed. The amount of medical reading by dentists and *vice versa* is by no means appalling, and is not due to a lack of opportunity by any means.

The *Southern Dental Journal* of April, 1888, republishes the editorial from *The Journal of the A. M. A.*, and fully concurs with all the statements therein made; the foregoing reply, is therefore also applicable to the former publication. Further statements of the *Southern Dental Journal*, by opposing the independence of dentistry — in the sense of independently improving dentists — are injurious to the best interests of dental science to whose advancement the DENTAL REVIEW is devoted with all its energy.

The statement that the editor of the DENTAL REVIEW was an active opponent of the late congress, is entirely without foundation, and the editor of the *Southern Dental Journal* is referred for proof to the editorial columns of the REVIEW,* for substantiation.

*DENTAL REVIEW, July, 1887, page 508 and August, 1887, page 573.

The real question at issue, however, is not in relation to any section of any medical organization, past, present or future, but whether an International Dental Congress would benefit dentistry, and we invite an expression of all dental journals on this point, for a dental congress is sure to come, is certain to be well attended and its influence will be felt wherever dentistry is practiced.

ADVERTISING.

The following letter has been received for publication. Answers to the questions it propounds are appended :

AS TO ADVERTISING.

To the Editor of the Dental Review :

DEAR SIR.—I see in your March issue an article on “ Advertising ” that seems to call for a reply. I would very much prefer that you use names, and be explicit, so that I would not have to assume that you refer to me.

Do you condemn the circulation of proper dental literature among the people by dentists. *per se*? If so, do you condemn such pamphlets and monographs as were prepared by White, Welch, Hurtt and many others? Have you investigated my plan of circulating such literature, and if so, will you specify *wherein* you condemn it? If you have not, is it fair to jump at conclusions and condemn what you do not fully understand?

I issue monthly a publication similar to the one Dr. Allport published years ago, and with the same name, *The People's Dental Journal*, and the plan and terms on which I furnish it are such that the greatest stickler for professional ethics can use it and not be identified with it in any way, or the veriest quack in the country can use it to “ advertise his wares ” (which he will do anyhow) and at the same time he will be circulating a class of dental literature that can but do some good. It is an “ elastic ” plan that accommodates itself to every man's ideas who wishes to circulate such literature.

It is not expected that the supra-professional practitioner will use or endorse it—it does not originate with him. I enclose a specimen copy and would ask that you specify what is objec-

tionable in it. If circulating such literature is an "unconscionable practice" I am glad to know that the company of those who use it is one I am not ashamed of. Yours truly,

C. W. MUNSON, D.D.S., Toledo, O.

The REVIEW believes in the education of the general public in the care of the teeth, by every means that can be brought into service. In accomplishing this object, next to the personal instruction which it is the duty of the dentist to give to his patient, the writing and dissemination of articles, pamphlets and monographs is recognized as the most useful method. That being the case, it is not the general dissemination of dental knowledge that is objectionable in Dr. Munson's *People's Dental Journal*, but the palpable fact that the motives for doing it are base in themselves, degrading to the profession, and unjust to other practitioners in the locality where it is circulated. The practice in this instance is prostituting a good thing to evil purposes. It is a wolf in sheep's clothing. The alleged publisher poses as a benefactor merely to proclaim himself. Intelligent people will see at once that his is only one of the common advertising schemes usually resorted to by ingenious tradespeople, utterly unworthy the dignity of a professional man.

The character of the books mentioned in the letter would seem to be entirely beyond the appreciation of a mind so destitute of love and reverence for the dental branch of the healing art as to promote the scheme of the *People's Dental Journal*. The literature of dentistry forty or fifty years ago consisted mainly of books intended almost exclusively for the instruction of the non-professional reader. They were, with rare exceptions, published with unselfish motives so far as "advertising" was concerned, *vide*, The Family Dentist by Josiah Flagg, Boston, 1822; A Popular Treatise on the Teeth and Dental Surgery by E. G. Kelly, Newburyport, Mass., 1843. In England there is no book which exercised a profounder influence (excepting, perhaps, the works of Hunter, Fox and Bell), than Wm. Robertson's Practical Treatise on the Human Teeth, published in Birmingham in 1835. It, too, was written for the general reader, and besides its scientific value it is a specimen of pure classic English of the Addisonian style. The more recent works, mentioned in the letter, are of this same character and were published with the

best intent. Such books are not to be compared but contrasted with the *People's Dental Journal*.

The great majority of men who have entered the profession of dentistry of late years are not of the stuff that quacks are made of. They are jealous of its reputation and will resent any attempt to lower its character. The REVIEW stands with the high minded, "supra-professional practitioner" if you will, for a lofty idea of dentistry and dentists; whose office it is to fearlessly point out the impediments to professional growth, as well as to cultivate and promote those influences which secure its development. Perhaps the best reply to the letter is contained in the subjoined circular received in our mail.

JUST WHAT YOU WANT!

A DENTAL JOURNAL PUBLISHED BY YOURSELF.

I publish the *People's Dental Journal* monthly, with new matter each month, edited especially for circulation among the people generally. I furnish the regular subscription edition, prepaid, at 75 cts. per 100 copies, or 1,000 copies for \$6.00. Single subscription, 25 cts., sample copy, free.

MAILED DIRECT.—To dentists who wish to send the *Journal* to their patrons and do not wish to be troubled with the distribution of it, I will mail it direct, addressed to each name, for 10 cts. a year each in lists of 50 or more at one time, not less than 20 to one office. Present EVERY PATRON with a year's subscription, and you will find it a good investment, but be sure and tell them of it. They will appreciate it all the more. Write names plainly. Try this plan a year and see if it don't pay, or take a local edition.

LOCAL EDITION PLAN.—I want to arrange with one dentist in every town to take a local edition of the *People's Dental Journal*. The local edition is printed as your own publication in every sense—your town in the heading and your name as publisher. I insert no advertising whatever. The paper is filled with the best of dental matter, new each month, and especially adapted to circulation by dentists everywhere.

I will give exclusive right to use the *Journal* as a local edition in any town to any dentist who will take regularly an edition of enough to justify me in reserving it for him.

TERMS.—500 copies with heading and two inch card, \$4.00 each issue; 1,000 copies, \$7.00 per issue; 2,000 copies, \$12.00; 5,000 for \$24.00. Terms, cash with order. Additional space for editorial matter of your own or for your local "ads," \$1.50 per column. If "ads" stand unchanged the charge is 50 cts. a column each issue after the first one.

SELF-SUSTAINING PLAN.—Take a local edition of as many as you can use each month, and secure enough local advertising to cover cost of same. An easy way to secure “ads” and pay for the cost of the paper in dental work, is to give each advertiser, when he pays for an “ad,” a due-bill or ticket equal to the amount he pays, payable in dental work. By getting three or four columns of “ads” for a year, at a good rate per inch, you can pay cost of each issue.

Take hold of it. Send at once, if you want it for your town. Any competent dentist can double his practice by using this plan, and with little or no cost to himself. Write for sample copies, and if you want right for your town, and no one is now taking it, state how many you will take and for how long. Address,

C. W. MUNSON, D.D.S., Publisher, Toledo, O.

A MODEL REPORT.

The report of the meeting of the Southern Illinois Dental Society, in this number of the DENTAL REVIEW is, we think, one of the best we have ever published. Reporters of the discussions in societies will do well to read it.

ENLARGEMENT.

Beginning with the May number of the DENTAL REVIEW, each issue will contain 64 pages or more of reading matter. Every endeavor will be made to keep up the separate departments so that a subscriber will be able to know, from a perusal of the REVIEW, that nothing of importance has been omitted, that has transpired in dental circles.

DOMESTIC CORRESPONDENCE.

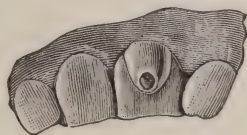
A MALFORMED TOOTH.

To the Editor of the Dental Review :

Dear Sir: I send you the model of a curiously malformed central incisor. At first glance the protuberance has the appearance of a supernumerary tooth. The base of the nodule extends two

or three lines above the margin of the gum. The apex presents an opening about one line in diameter communicating with the pulp chamber of the tooth proper.

Patient a Miss about fifteen years of age, was taken to a dentist of considerable local reputation about three years ago, he pronounced the nodule a supernumerary tooth, and in attempting to extract it, broke the point off exposing the pulp. He then advised that nothing further be done for a few years. Although the patient suffered severely for a time, advice was not again sought until she was brought to me some two weeks ago. I



found an abscess discharging through a fistula on the gum above the tooth, and the tooth considerably discolored, an appointment was made for the following week, at which time I removed the nodule with corundum wheels; the tooth then presenting the appearance of the following diagram,* "A" being a fold of enamel, showing the outline of the nodule, "B" dentine, and "C" opening into the pulp chamber, as it appeared without any enlargement. I found the pulp cavity very large,—possibly owing to some extent to caries—and the foramen at the apex of the root very large, otherwise the root appears to be normal.

I was somewhat undecided whether to cut the tooth off and crown, or remove the protuberance and fill; but finally concluded the best practice would be to bleach the tooth, and insert a piece of porcelain in the opening made by the removal of the nodule.

T. W. BECKWITH, D.D.S.

Sterling, Ill., April 23, '88.

MATRICES.

To the Editor of the Dental Review:

DEAR SIR: One can not help being amused at the attitude lately taken by two worthy gentlemen of the profession, in regard to the Freeman tin matrices; one claiming to be the

* Diagram inadvertently omitted.

inventor, while the other says he has used them for years. Now this may or may not be true; but granting that it is, their position is very much like that of the boasting Chinaman, who claimed that his people possessed gunpowder long before the English knew anything about it, and in reply was told, "you are right, but we taught you how to use it." Right here is the point; there seem to be a number in the profession, who are ever ready, when a new idea is offered, to exclaim, "Why, I have known this for years," or "I did that myself long ago," thus stealing another's "thunder." To my mind the credit for new inventions belongs not to the one who discovers a new thing and keeps it to himself, but to him who first gives the result of his knowledge and experience to the profession. Dr. D. B. Freeman has given us the benefit of his ingenuity and inventive capacity, by teaching us not only how to use the tin matrix, but how to make it, and to him, therefore, belongs all the credit.

Yours respectfully, C. F. H.

Chicago.

FOREIGN CORRESPONDENCE.

AN INTERESTING CASE.

To the Editor of the Dental Review :

DEAR SIR:—Mrs. O'C., æt. about sixty years, presented herself for treatment. The case exhibited the following interesting features that went very far toward making it one much removed from the ordinary run of dental practice.

Nearly forty years before, by some accident, the patient had received a severe cut, extending from an inch below the inner canthus of the right eye, and extending downward and backward, terminating at the lower edge of the inferior maxilla, and about half an inch posterior to the right inferior mental foramen; the cut had evidently been made by some very sharp instrument, it having severed all of the soft tissues in its track, causing a cicatrix to form about as thick and as hard as a lead pencil.

The contraction incidental to cicatrization had produced a marked deformity of the right side of the face. This was con-

siderably increased, as the patient had quite a tendency toward obesity; I found upon examination that no control whatever was had over the muscles anterior to and in the immediate vicinity of the cicatrix. This state of affairs continuing for such a long time had caused the angle of the mouth to be drawn back about one-half an inch, and downward nearly three-fourths of an inch as compared with the left side. It was to correct this deformity that the patient came to me, bringing with her a number of appliances that had been constructed with a view of correcting the trouble.

After carefully examining the case I came to the conclusion that in order to best produce the desired result, it would need a device to *cover* this by external application, instead of distension by internal means, as attempted by the cases she showed me. As she was wearing a partial upper case I utilized this to carry the support and shield for the corner of the mouth. The plate being made in the ordinary way, very short, plain teeth were used to admit of a heavy platina bar being vulcanized into it, this previously having been drilled and tapped to act as support for a platina bar terminating in a hook. The bar was slotted to allow of adjustment of the hook that afforded some support to the depression at the corner of the mouth. When this was attained to the desired extent, the bar could be secured by screws passing through the slots and into the bar vulcanized in the plate.

After the case as now prepared was in situ, the angle of the mouth and depression was modeled in wax, shading off to the normal surrounding parts; this wax model was then removed, a die cast from the same, and a piece of gold, No. 5 B. P. G., struck up, and where it came in contact with the platina hook, a square piece of gold was soldered on to afford an anchorage for a screw, the head of which was countersunk in the concavity of the hook; after securing the gold shield to the hook the plate was adjusted to the mouth, when a slight trimming and relieving of pressure here and there completed the operation as far as I was concerned. The gold shield, while being shaped to conform to the opposite oral angle, was so shaded off to accommodate the surrounding parts as to admit of perfect speech, during which the deformity was entirely relieved, whereas, without the appliance, the act of speaking magnified the defect. The patient was

dismissed with instructions to secure the services of an artist to color the shield to harmonize with its surroundings.

This case could have been presented in a more interesting and satisfactory manner by the use of drawings illustrating the appliance and the ante and post-operative conditions of the case. This would have been done, but unfortunately the patient was so peculiarly constituted as to consider it essentially in the light of a financial transaction, and at the suggestion that a sketch or photograph of the case would be in order, the righteous! indignation that was aroused was well nigh alarming; but, of course, that is one of the perquisites of dentistry.

The foregoing case, being one possessing such unusual points of interest, is my only excuse for presenting it.

LONDON, ENG.

W. MITCHELL, D.D.S.

REVIEWS AND ABSTRACTS.

"THE STUDENT'S MANUAL," by L. P. Haskell. (Noted last month, in "Books Received.")

This small volume treats in its twenty chapters, briefly, but concisely, of all the processes common to the dental laboratory, with the conspicuous exception of crown and bridge work, which the author probably relegates to the operative branch of our specialty.

It is a question, whether or not the author has overdone the matter of brevity. Some of the chapters would hardly suffice for ordinary students' notes. Yet considering the dimensions of the volume, it would be difficult to conceive of one of its size containing more practical information.

The author states in his preface, that in it he gives the result of forty years experience in the dental laboratory. So as an aid to the beginner it will not tend to confuse, as do most of the larger works, by giving many methods.

The work contains many useful formulæ and brings out many general principles that can not antagonize with the teachings of other instructors. The chapter on celluloid is based, apparently,

on an experience with the material worked by primitive methods, judging by the results we have seen in that material recently.

The conspicuous fault of the little work, however, as a primer, seems to be its lack of illustrations. With the exception of an illustrative paper on "orthodontia," which is a reprint of a paper by E. H. Angle, D.D.S., and which serves as a sort of an appendix to the volume, the manual is very sparsely illustrated and we would suggest that the expense put into the illustrations of "swaging-block" and "soldering-pan" might have been better expended on the illustration of a few typical cases in the chapter on "clasping." However, as a first edition, it is creditable to the author, and the mechanical execution of the volume leaves little to be desired.

A.

DENTAL OFFICE AND LABORATORY. Published by Johnson & Lund, Philadelphia.

This neat quarterly still lives and it is edited by Dr. T. F. Chupein, who has an excellent article entitled "The Dental Laboratory" in the April issue. Our reviewer was in error last month when he stated that it had ceased to exist last December. Since Dr. Chupein has taken control of the editorial columns it has become one of the best quarterlies published.

LECTURES ON CERTAIN DISEASES OF THE JAWS, Delivered at the Royal College of Surgeons of England, 1887, by Christopher Heath, F. R. C. S. Sixty-four illustrations: Philadelphia, P. Blakiston Son & Co.

This book consists of the three lectures by the occupant of the Hunterian Chair of Surgery and Pathology in the Royal College, delivered in 1887.

The first lecture is on diseases of the antrum, and is prefaced by some account of Nathaniel Highmore's study of this cavity, two of his original drawings made in 1621 being reproduced. This lecture gives the most accurate anatomical description which the maxillary sinus has yet received. Perhaps the most practical part of the book to the dental practitioner is found in his chapter under the head of *Suppuration of the Antrum, or Abscess*, the cause being given as the extension of inflammation from alveolar abscess to the lining membrane of the antrum. The symptomatology, diagnosis and treatment are described in detail. The treatment recommended is open to criticism from the stand-

point of the dental surgeon ; for instance the extraction of all decayed teeth or stumps in the affected jaw is advised. This is an unwarranted sacrifice of useful organs in the light of modern dental knowledge and experience. Unless grave complications are present, this disease of the antrum will quickly subside if the alveolar abscess is treated and cured in the ordinary way, except that freer drainage be provided for. *Cysts* of the antrum, *polypi* of the antrum, and *dentigerous cysts* are also treated of in this chapter, cases being cited in illustration.

The second lecture treats of tumors of the jaws, and includes *odontomes epulis*, *fibroma*, *enchondroma*, *osteoma*, *sarcoma* and *epithelioma*.

The third lecture is entitled Diseases of the Temporo-maxillary Articulation and Closure of the Jaws, and describes and illustrates historical cases taken from the hospital records for the most part. The attempted cataloguing of the operations for closure is incomplete without an account of Dr. Patrick's successful operations, published in the transactions of the Illinois State Dental Society for 1883.

NOTE BOOK FOR DENTAL STUDENTS, DENTAL ANATOMY AND PHYSIOLOGY, by James Rymer, L. D. S., England, M. R. C. S. London: J. & A. Churchill, 1888.

This little note-book is written with the express object of proving useful prior to examination. It is a collection of matter condensed from notes of Mr. Gaddes' lectures, and from Mr. Charles S. Tomes' Dental Anatomy. Much of the information is concisely given in a form that will recommend it to the practitioner as well as student. The anatomical description of the teeth is very suggestive of Dr. Judd's little brochure. The simple terminology of the surfaces of the teeth advocated, viz.: Mesial and distal, labial or buccal and lingual should be uniformly adopted.

The *membrana preformativa* and Nasmyth's membrane seem to be confounded on page 20. Peridental membrane is called periosteum, and the subject is not up to Dr. Black's researches of this tissue. The space given to comparative odontology is out of all proportion to its importance.

PAMPHLETS RECEIVED.

Sixth Annual Report of the Illinois State Board of Dental Examiners for 1887, C. R. E. Koch, Secretary, Chicago.

Observations sur une Maladie Analogue Au Scorbut. Par le Docteur E. Magitot. Paris; G. Masson, Publisher, 1887.

Considerations sur les Kystes Du Maxillaire Supérieur, dans leurs rapports avec le Sinus. Par le Docteur E. Magitot. Paris; G. Masson, Publisher, 1887.

De La Glossodynie. Par le Docteur E. Magitot. Paris. Republished from the Gazette Hebdomadaire de Medicine et de Chirurgie, 1887.

Du Drainage Métallique A Faible diamètre dans le traitement des Kystes de la Machoire. Par le Docteur E. Magitot. Paris; Felix Alcan, Publisher, 1887.

The first number of "The Practical Dentist" was issued April 1st. This is a new "journal for the dental practitioner." Published by C. W. Munson, and edited by Drs. W. E. Blakeney and F. O. Brake, all of Toledo, Ohio.

DENTAL COLLEGE COMMENCEMENTS.

ROYAL COLLEGE OF DENTAL SURGEONS OF ONTARIO.

The following named persons satisfactorily passed the annual examinations and received the degree of L. D. S., on March 10, 1888:

Fred J. Capon, Toronto, Ontario.	Richard McKnight, Alliston, Ontario.
Geo. H. Cook, Guelph, Ontario.	Jesse Mills, Toronto, Ontario.
Donald Clark, Woodstock, Ontario.	J. A. Robertson, Ottawa, Ontario.
C. H. Felton, Toronto, Ontario.	J. A. Shannon, Dutton, Ontario.
J. H. Frain, Brantford, Ontario.	R. T. Winn, Waterloo, Ontario.
C. E. Green, Greenville, Ontario.	W. Earl Willmott, Toronto, Ontario.
Thomas G. Holt, Listowel, Ontario.	Harold Wood, Toronto, Ontario.
A. J. McDonagh, Napanee, Ontario.	

NATIONAL UNIVERSITY, DENTAL DEPARTMENT.

The annual commencement exercises of this institution were held in the Congregational church, Washington, D. C., on Wednesday evening, April 25, at 8 P. M. The following named gentlemen received the degree of Doctor of Dental Surgery:

A. A. Anderson, Pennsylvania.	Robert I. Hyatt, District of Columbia.
Arthur H. Baker, Minnesota.	Joseph M. McDonnald, New York.
George M. Beckett, New Jersey.	S. F. Newton, District of Columbia.
Jesse M. Campbell, Missouri.	Wm. J. Reynar, Canada.
Samuel J. Cockerille, Dist. of Columbia.	Jesse B. Rutherford, Pennsylvania.
J. W. Davis, District of Columbia.	W. A. Van Norden, Vienna, Austria.

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TO THE EDITOR OF THE DENTAL REVIEW:

Dear Sir:—A short time since, a young gentleman about twenty-four years of age, suffered from pain on the right side of the face every day at five or six in the afternoon, the pain continuing for four or five hours. This condition kept up for about three weeks, during which period he visited a dentist daily. A physician was consulted and the only relief afforded was by the application of cocaine to the gums of the right lower jaw. This was only temporary however, very soon his lowerlip became so sensitive that it was with difficulty that he could introduce food into his mouth, and after it was so introduced he could not masticate on the affected side. The teeth being defective on the other side of his jaw, he was compelled to swallow his nutriment unmasticated. He lost 11 pounds in weight. When I was first consulted an examination of his teeth showed that none were pulpless. There were two amalgam fillings, one in the crown of the second bicuspid and one in the crown of the second molar. No cavities in any of the upper teeth. The teeth were partially covered with salivary calculus, which was removed. At the first visit the amalgam was removed from the molar. The gums were painted with equal parts of menthol, chloroform, tr. aconite root and tr. iodine. Fluid ext. tonga, directed to be taken in drachm doses for four hours. In two days he returned saying he had passed the first night comfortably, the second in pain as before. The amalgam was then removed from the bicuspid and both cavities filled with gutta-percha. The former treatment was repeated. The patient returned in four days saying he had slept well but was still unable to touch his lip. Aconite liniment was prescribed to be applied until he felt tingling in the tongue. In four days all pain had ceased and he could eat and sleep well. What was the cause of the trouble?

Yours respectfully,

Chicago.

B. D. W.

TO THE EDITOR OF THE DENTAL REVIEW:

Dear Sir: Does the adoption of the code of ethics of the American Medical Association, by a dental society, convert it (the dental society) into a medical society?

Respectfully,

G. W.

[It does not. A dentist is not authorized to practice medicine in the State of Illinois unless he holds a diploma from a recognized medical college, or passes an examination before the board of examiners. No one can become a member of a medical society unless he is a legal practitioner of medicine. A dentist as a dentist is not a practitioner of medicine in the eyes of the law of the State of Illinois.—EDITOR.]

MEMORANDA.

THERE are about fifty dentists in Louisville.

THE population of Louisville is nearly 200,000.

DR. S. J. HILL, of Fargo, Dakota, is having a vacation in New York city.

COLORADO STATE DENTAL SOCIETY.—Meets at Denver, Colo., June 5, 1888.

DR. W. B. KNAPP, of Fort Wayne, is quite ill, and unable to be at his office.

DR. J. W. WASSALL suggests that saccharin might take the place of sugar in dentifrices.

A CHICAGO dentist was held up and robbed of \$1,000 by a footpad recently. He was not an editor.

THE leading hotels in Louisville are the Galt House, Louisville Hotel, Alexander Hotel and Fifth Avenue Hotel.

PROF. F. O. STOCKTON, son of Dr. C. S. Stockton, will shortly locate in a southern clime. We wish him every success.

EVERY person who desires to have a directory of dentists should purchase Beecher's Dental Directory of the United States.

DR. JAS. McMANUS, of Hartford, has sent us a fine photograph of the statue of Dr. Horace Wells, the discoverer of nitrous oxide anæsthesia.

DR. WILLIAM A. PEASE, of Dayton, Ohio, recommends iodide of potassium 3 i. dissolved in $\frac{3}{4}$ i. of water, as a root dressing and disinfectant.

ON October 8, 1887, a medical school for Chinese was opened at Hong Kong. When it opens a dental department, Chicago will furnish the "Professors."

A NEW deodorant for iodoform is said to be the ethereal oil of *erodia fraxinifolia*, a native of Asia. Sanitas oil is also a useful deodorant in this respect.

WE have "Zahn-clinics" now in our midst and also "every man his own dentist" for \$1. A package of amalgam (?) and six instruments go with each package!

WHEN you fill the oil can, from which the engine is lubricated, add two or three drops of an essential oil—gaultheria, sassafras, rose, cinnamon or whichever is most agreeable.

THE First District Dental Society, of New York will meet on Monday evenings instead of Tuesday as heretofore. The meetings are held in the rooms of the Academy of Medicine.

AN interesting paper on "Filling Teeth with Crystal-Gold," has been received from the able pen of M. Schlenker, of St. Gallen, Switzerland, which will appear in the June number.

THAT light passing through thin sheets of gold is green, is a fact well known. Recently a German discovered that light passing through very thin sheets of platinum is dark blueish-gray.

"SCOTCH OATS ESSENCE" is said to be composed of one-third alcohol, and every ounce contains nearly one-half grain of morphine. This is advertised to destroy the morphine habit!

ENGLISH plain teeth are said to contain 25 per cent more of platina than any other manufacture, and the lessened cost of manufacture in England is offset by the increased use of this metal.

THE programme is now being issued for the joint meeting of the Southern and American Dental associations. It will be a sixteen-page pamphlet, and is gotten up in an attractive style.

ACCORDING to Poulson's Quarterly Report, 176 deaths occurred among dentists during twelve years and reported in Peterman's Almanac. The average age of dentists is 59 years, 5 months and 15 days.

By a command from military authority, soldiers of the garrison at Breslau, Germany, who are affected with dental lesions, are treated at the dental institute in Breslau, and under the charge of the private tutor, Dr. H. Bruck.—*Journ. für Zahnk.*

THE quotation in Dr. Johnson's paper, on page 179 *et seq.*, attributed to Dr. Black is not exactly correct. Dr. Johnson summarized some statements in Dr. Black's lectures and the intelligent (?) proof-reader got in the quotation marks just the same.

ANTIPYRIN should be given with, or just after eating, otherwise it causes derangement of the digestive functions. Dose, v to xxx grs. In high fever the maximum dose may be given, then gradually decrease it until the temperature is satisfactory,

It is proposed to get up an excursion to the Mammoth Cave of Kentucky after the meeting of the Dental Associations in Louisville next summer. The cave is easily reached by rail, and is only about sixty miles from the Falls City. It is one of the wonders of the world.

DENTISTS IN THE HOSPITALS OF PARIS.—The following gentlemen have been appointed as dental surgeons to the hospitals of Paris: Pietkiewicz, Andrieu, David, Gaillard, Galippe, Ferrier, Marchande, and Cruet. The compensation is 600 francs per annum (about \$120).

M. EHLMANN reported on March 16, 1888, to the French Surgical Congress at its late session in Paris, France, twenty operations for cleft palate, in seventeen of which a successful result was obtained. He thought the most favorable age for the operation was between two and four years.

DR. W. H. WHITSLAR, Secretary of Section V., *Materia Medica* and Therapeutics of the American Dental Association, has sent out letters to every member of the section requesting papers, reports or anything of interest which should be brought before the joint meeting in Louisville next August.

It is about this time of the year that dentists begin to think of angling and out-door sports in general. We would like to urge upon dentists everywhere to close their offices Saturdays at one or two o'clock in the afternoon and go riding or fishing, or engage in some other form of recreation in the open air. The staff of the DENTAL REVIEW will set the fashion, beginning the first Saturday in June.

DR. F. H. REHWINKEL, of Chillicothe, O., one of the secretaries of the Section on Dental and Oral Surgery of the late International Medical Congress, is suffering from a severe attack of inflammation of the eyes, and the doctor is, by order of his physician, entirely incapacitated for daily labor.

DR. L. J. MITCHELL raises the question "whether large amalgam fillings in close proximity to the pulp are more conducive to the promotion of pulp nodules than gold or other plastics, for lately I have found several of the above-mentioned, and have not observed a single case under any other kind of a filling."

OFFICERS of the Southern Illinois Dental Society: President, G. W. Entsminger, Carbondale; vice-president, G. A. McMillen, Alton; secretary, C. B. Bohland, Alton; treasurer, J. G. Dickson, Carmi; executive committee, T. W. Prichett, Whitehall; A. D. Finch, Anna; W. J. A. DeLancy, Centralia. Next place of meeting, Carbondale.

THE next time you apply arsenic to a pulp in a distal cavity of a molar or bicuspid, if you do not seal the cavity with gutta-percha and *do* use a cotton plug soaked in sandarac varnish, tie a waxed string around the tooth. This will hold the application in place. The string may be wrapped around the tooth two or three times, then make a surgeon's knot.

THE *Zahntechnische Reform* reports a case of death from chloroform narcosis in the dental chair. The case occurred at Lüttich, Germany; the administration was authorized by a physician who had just examined the heart and lungs. The tooth was extracted before the final stages of narcosis had set in and death took place immediately after the extraction of the tooth.

"The incessant elaboration of alkaloid products, formed at the expense of putrid elements, precisely as urea and carbonic acid are similarly and simultaneously formed, is now fully confirmed, and to distinguish this class of products from that of the cadaveric alkaloids or ptomaines Gautier has named them leucomaines, or alkaloids derived during the processes of life from the decomposition of albuminoid substances."—*Aitken*.

CARBOLATE of camphor, which is so much discussed in our medical exchanges, is no new thing in dental practice, as we have used it for injection of alveolar abscesses for several years, and also around the roots of teeth in the so called pyorrhœa alveolaris. It will be found spoken of in Bruce's *Materia Medica* and other standard works. Ninety-five per cent carbolic acid and gum camphor, equal parts by weight, or more, is a very useful combination.

THE manufacturers of artificial teeth have lost sight of one fact, namely, that the arrangement and size of the sixteen natural teeth in each jaw is such, that when the teeth are in apposition, because of the smaller size of the upper third molars, the arch above and below ends at the same point. In the making of artificial teeth the relative size is generally disarranged, so that sometimes the upper and sometimes the lower teeth will extend further back than they should.

AT the annual meeting of the First District Dental Society held Tuesday evening, April 3, 1888, the following gentlemen were elected officers for the ensuing year: President, W. W. Walker; vice-president, J. F. P. Hodson; secretary, B. C. Nash; treasurer, John I. Hart; librarian, J. Bond Littig; also, a board of censors for five years, consisting of A. L. Northrop, Frank Abbott, S. G. Perry,

William Carr and A. R. Starr. Delegates to the State Dental Society for four years: J. W. Taylor and B. A. R. Ottolengui. B. C. NASH, Secretary.

WE report with regret the following sad death of Mrs. Taft, and bespeak for Dr. Taft the sympathy of the entire profession:

"CINCINNATI, O., April 14.

"Mrs. Taft, the wife of Dr. Jonathan Taft, one of the most prominent dentists of this city, was struck by a locomotive on the Ohio & Mississippi Railroad near Riverside and died shortly after. Mrs. Taft was on her way to her home at Riverside, having just left the street car, and was crossing the Ohio & Mississippi Railroad when she was struck by the locomotive."

GEORGE WASHINGTON'S LAST TOOTH.—Here is an extract from the will of John Greenwood, a dentist, who owned part of the property now owned by Mr. Pulitzer—for it was all in bits—in 1818. He died in 1819:

"Item.—I give to my eldest surviving son my gold watch and chain, with that valuable relic hanging to the chain, the only or last tooth that remained growing in the mouth of our late and worthy president, George Washington, which tooth he sent to me from Mount Vernon, Virginia state, as may be seen in his own handwriting now in my possession. The said tooth must be kept as a relic, and given to the next male heir of my children."—*New York Sun*.

PASTILLES FOR FETID BREATH.

Coffee roasted and powdered.....	3 iij.
Charcoal powdered)	āā..... 3 i.
Boric acid.....	
Saccharin.....	gr. x.
Tincture of vanilla.....	q. s.
Mucilage of acacia.....	q. s.

Reduce the solids to a moderately fine, uniform powder, flavor it with the tincture and then mix it with enough mucilage to make a mass, which is to be divided into troches or pastilles weighing ten grains each.—*American Druggist*.

NATIONAL DENTAL ASSOCIATION, U. S. A.—The National Dental Association of the United States of America will hold its next regular meeting at Washington, D. C., July 24, 25 and 26, 1888. For this meeting, as for all former ones, the authorities of the Smithsonian Institution have kindly granted the use of the Lecture Hall of the United States National Museum. All members of the profession in good standing are invited to be present. Art. II, Sec. I of Constitution: "The future membership of this association shall be composed of dentists who may be elected upon application, which application shall be accompanied by credentials of membership in a State Society or by a recommendation from five members of this association or of his State Society." R. FINLEY HUNT, D.D.S., Sec'y.

NEBRASKA STATE DENTAL SOCIETY.—The twelfth annual meeting will be held at Grand Island, Neb., May 15, continuing four days. The profession in Nebraska is urgently requested to do all in their power to make this meeting the most successful ever held. The officers of the society have exerted themselves to secure all possible aid in the way of papers and clinics. Among other papers to be read will be an illustrated paper by Prof. L. C. Ingersoll, of Keokuk, Ia., on "The Nature of the So-called Dental Pulp." Two mornings will be devoted to clinics and the following are some of the operations to be performed: Dr. W. W. Vance, gold contour filling—electric mallet; Dr. G. E. Douglas, gold filling;

Dr. I. W. Funck, immediate filling of pulpless roots; Dr. F. M. Shriver, practical case of bridgework; Dr. J. J. Willey, gold crown; Dr. F. O. Welker, partial gold plate; Dr. Louis Ottofy, implantation; Dr. W. H. Stryker, gold contour filling; — engine mallet; Dr. H. J. Cole, filling; Dr. A. W. Nason, amalgam filling; Dr. J. W. Keyes, administration of nitrous oxide and ether.

The programme for meetings of the Chicago Dental Club, held on the fourth Monday evening of each month, is as follows: *May*, 1888—Dr. J. H. Woolley, Pulpless Teeth. *June*—Dr. I. B. Crissman, Anaesthetics in general. *July*—Dr. J. S. Marshall, Fractures of the Jaws. *Sept.*—Dr. Arthur B. Freeman, Delicacy of Manipulation in Dental Operations. *Oct.*—Dr. J. Austin Dunn, subject to be announced. *Nov.*—Dr. E. S. Talbot, Etiology of Irregularities of the Teeth. *Dec.*—Dr. D. B. Freeman, Periods of Calcification and Decalcification of the Teeth. *Jan.*, 1889—Dr. Chas. R. Baker, subject to be announced. *Feb.*—Dr. E. L. Guffin, Therapeutics. *Mar.*—Dr. W. A. Stevens, The Nerve Supply to the Teeth. *April*—Dr. R. T. Hasselris, The difference in the Practice of Dentistry in Scandinavia and the U. S. *May*—Dr. E. L. Clifford, Pus. *June*—Dr. I. D. Sperling, subject to be announced. *Sept.*—Dr. Geo. W. Whitefield, Sensation. *Oct.*—Dr. Geo. W. Haskins, Dental Chemistry. *Nov.*—Dr. C. Stoddard Smith, subject to be announced. *Dec.*—Dr. Chas. F. Hartt, subject to be announced.

JOINT MEETING OF THE AMERICAN AND SOUTHERN DENTAL ASSOCIATIONS.

LOUISVILLE, Ky., April 16, 1888.

DR. A. W. HARLAN, Chicago, Ill.

Dear Sir: The hotels propose the following rates for our meeting: Louisville Hotel, \$2.50 to \$3.00 per day; Galt House, \$2.50 to \$4.00 per day. At these hotels the higher rate is for rooms, with extra accommodations, such as special parlors, bath rooms, etc., attached. Fifth Avenue Hotel, \$1.75 per day; Alexander Hotel, \$2.00 per day; Phoenix Hotel, \$2.00 per day; Rufer's Hotel, which is on the European plan, \$1.00 per day for room.

I think you can safely announce that the railroad rates will be one and one-third fare for the round trip from all parts of the country.

Respectfully yours, CHAS. E. DUNN,
Chairman Committee of Arrangements, Southern Dental Association.

CUMARIN is employed in the following proportions for concealing the odor of iodoform

B.	Iodoform pulv.....	gm 0.75
	Cumarin.....	" 0.15
	Fiat pil. I.	
B.	Iodoform.....	gm 15.0
	Cumarin.....	" 3.0
	Lycopodii.....	" 3.0
	Fiat Pulv.	
B.	Iodoform.....	gm 15.00
	Cumarin.....	" 5.00
	Alcohol q. s.	
B.	Iodoform.....	gm 15.0
	Cumarin.....	" 3.0
	Vaselin, liquid.....	" 16.0

—D. Med. Wochenschr.

CHICAGO DENTAL SOCIETY. — Programme of Scientific Work. — *June*, 1888 — Truman W. Brophy, Plastic Oral Surgery; W. J. Martin, Fractures of the Jaws. *July* — Louis Ottofy, Dental Records and Book-keeping; J. N. Crouse, Fees. *Oct.* — A. E. Brown, Bleaching Teeth; W. B. Ames, Compressed, Heated and Dried Air in Dental Surgery. *Nov.* — G. W. Whitefield, Motors — Electric, Gas and Water; E. M. S. Fernandez Blow-Pipes and Soldering. *Dec.* — W. W. Lazear, Anæsthetics; W. W. Curtis, Extracting Teeth; A. J. Nichols, Hæmorrhage. *Jan.*, 1889 — I. A. Freeman, Destroying and Removing the Pulp; B. L. Rhein, Filling Roots. *Feb.* — G. W. Nichols, Treatment of Teeth for Pregnant Women; J. H. Woolley, The First Permanent Molar. *Mar.* — J. F. Austin, Tin in Operative Dentistry; C. A. Kitchen, Treatment of Deciduous Teeth. *April* — W. A. Stevens, Tic-Douloureux (Annual Meeting). *May* — M. Stout, Dentistry in the Far East; J. S. Burlingham, Pre-Historic Dentistry. *June* — E. C. Timmerman, Pain Obtunders; A. W. Harlan, New Remedies. *July* — G. S. Salomon, Inflammation; Nels Nelson, Anti-Pyretics. *Oct.* — B. S. Palmer, Fermentation; E. A. Royce, Putrefaction. *Nov.* — G. H. Bentley, Alveolar Abscess; A. B. Clark, Diseases of the Gums. *Dec.* — D. B. Freeman, the Effects of Eruptive Diseases on the Teeth; W. E. Hall, Syphilis and Syphilitic Teeth.

THE KENTUCKY STATE DENTAL ASSOCIATION will hold its eighteenth annual meeting at Louisville, Ky., beginning Tuesday, June 5, 1888, and continuing three days. The meeting will be held in the Louisville College of Dentistry, Chestnut street, between Floyd and Preston.

Programme: Address of the President, Dr. W. S. Smith, New Castle, Ky. — *Essays.* — Inflammation, Dr. Henry D. Eggers, Louisville; Antiseptics in the Oral Cavity, Dr. L. A. King, Henderson, Ky.; Cocaine with Clinics, Dr. Wm. Edwards Baxter, Frankfort, Ky.; A Plastic Filling with Clinic, Dr. H. B. Tileston, Louisville; Danger Arising from the Treatment of Tuberculous Patients, Dr. W. S. Smith, New Castle, Ky.; Manipulation of Crystalloid Gold with Clinic, Dr. W. F. Morrill, New Albany, Ind. — *Clinics.* — Cocaine, Dr. Wm. Edwards Baxter, Frankfort, Ky.; Plastic Filling, Dr. H. B. Tileston, Louisville; Crystalloid Gold, Dr. B. F. Morrell, New Albany, Ind.; Aluminum Cast Dentures, Dr. C. C. Carroll, Meadville, Pa.; Filling Gum Cavities on Lower Molars with Non-Cohesive Gold, Dr. H. E. Beach, Clarksville, Tenn.; Cylinder Fillings, Dr. J. B. Alexander, Louisville; Crowns, Dr. J. Hooper, Louisville; Impressions, Dr. B. Oscar Doyle, Louisville. — *Voluntary Papers.* — The use of Cement in Molars, Dr. F. M. Harris, New Albany, Ind.; A short talk on the Irregularities of the Teeth, Dr. G. W. Keely, Oxford, Ohio; Purely Defensive, Dr. Henry D. Eggers, Louisville; The Duty of a Dental Association, Dr. W. P. McQuown, Georgetown, Ky. Dr. A. W. Harlan, of Chicago, is expected to be present.

Officers: President, Dr. W. S. Smith, New Castle, Ky.; vice-president, Dr. J. H. Baldwin, Louisville; treasurer, Dr. J. F. Canine, Louisville; secretary, Dr. Chas. E. Dunn, Louisville; board of censors, Dr. J. T. McMillan, Paris; Dr. J. H. Baldwin, Louisville; Dr. H. B. Tileston, Louisville; executive committee, Dr. W. S. Smith, New Castle; Dr. B. Oscar Doyle, Louisville; Dr. J. W. Wallace, Louisville; State board of examiners, A. O. Rawls, D.D.S., Lexington; A. Wilkes Smith, M.D., D.D.S., Richmond; C. G. Edwards, D.D.S., Louisville.

The State Board of Examiners will meet daily during the session to register and examine applicants. Members of the dental profession at large are cordially invited to attend and unite with us in making the meeting one of great profit. Reduced rates have been arranged for at the Fifth Avenue Hotel at \$1.50 per day. This hotel has been offered and accepted as a general headquarters for visitors and members. For further information address the secretary,

Dr. CHAS. E. DUNN, No. 529 Second street, Louisville, Ky.

THE DENTAL REVIEW.

VOL. II.

CHICAGO, JUNE 15, 1888.

No. 6.

ORIGINAL COMMUNICATIONS.

REPORT OF THE COMMITTEE ON DENTAL PRACTICE.*

BY M. L. RHEIN, M.D., D.D.S., NEW YORK CITY.

The past year has been prolific in material for your committee's report. The meeting of the International Medical Congress furnishes a stimulus to which is due in a large measure the many advances made in our practice. When a patient turns over to our care the welfare of his dental organs, what is our first duty? Put them in a condition of cleanliness, for this is absolutely necessary before, in the majority of cases, a true conception can be formed of what work is demanded. For the removal of calcareous deposits the dental depots are flooded with instruments, but the profession is somewhat divided as to the merits of the two systems, viz: the push and pull movement. Now your committee believe in both of these methods; whenever the instrument does not come in contact with the gum, the push method is, generally to be preferred; but as soon as this style is used under the gum it produces unnecessary laceration of the parts, and there is danger of portions of the deposit being lost among the pericemental tissues, and later, starting up an irritation as foreign bodies. It is here that the pull instruments are so efficacious, for with them there is no excuse for losing any of the deposit or lacerating the tissues unnecessarily. The pull form of instrument should terminate with an acute angle but a trifle removed from a right angle, though unfortunately nearly all of them

*Read before the Dental Society of the State of New York at its twentieth annual meeting, held in the city of Albany, on Wednesday, May 9th, 1888.

have perfect right angle terminations, sometimes even tending to obtuseness. The instrument should be of the best of temper, having a delicate termination, and the edge always in good condition, so that when by carefully inserting it under the border of the deposit a moderate pull will always cause it to come away. The cutting end of the instrument whenever feasible should conform to the shape of the tooth. Notable instruments of the pull class are found in the Baylis and Abbott sets, and of the push style in the Cushing and Atkinson forms. Having removed all the calculary deposits the polishing with the pumice powder comes next. The wetting of this with hydrogen peroxide instead of water has been found of great value. Brown's metal strips with moistened pumice, stand unrivaled for polishing approximate surfaces, but should always be supplemented with dental floss.

We have heard very little during the past year of the Herbst method of filling teeth. The great danger of defects ultimately appearing around the enamel margins has caused the abandonment of the method by many of its former advocates. On the other hand, the beautiful adaptability of the Wolrab gold in lining cavity walls has been of inestimable benefit to us, inasmuch as it has put all our gold manufacturers on their mettle; and to Mr. Williams, we award the palm of eclipsing the Wolrab gold in his late production, crystalloid gold. The mallet, however, still reigns supreme, either in the shape of the electric, engine, automatic, hand, or the very recent production of Dr. Bliven of the pneumatic, which is the very closest imitation in form of blow to the electric.

The past few years have finally settled the fact that in all approximal fillings complete contour restoration must be made so as to insure the best practical results; and all separations are to be avoided and condemned.

The proper use of alloy fillings has received a great stimulus of late. Your committee cannot condemn too severely the habit so many practitioners have of carelessly inserting an amalgam filling in a manner that says, plainer than speech, anything will do here, considering the price to be paid. The use of copper alloy has been largely advocated during the past year. Its great objection is its extreme blackness, which is always an unpleasant thing to see in any mouth. Equally good fillings can be made of

the light colored alloys if they are properly inserted and finished. Having first adjusted the rubber dam, prepare the cavity as carefully as for gold. Then weigh the alloy and mercury and mix it thoroughly in a mortar, being careful to have it soft enough if contour work is needed. Pack in small masses with the rotary method, and when sufficient amalgam is inserted take small pieces of gold foil, No. 1, and after annealing burnish them lightly over every exposed portion of the filling. The gold will be entirely taken up by the excess of mercury and disappear, leaving perfect edges, and a finish the color of bright steel, which will take as fine a polish as a gold filling.

The immediate separation of teeth has been very much encouraged by the admirably constructed separators introduced by Drs. Perry, Parr and Morey. While of inestimable benefit at times, great harm has been done by their improper use.

The use of the matrix has been very much increased of late, so that to-day it is a necessary adjunct of every dental office. It is, however, a standing menace to the future of operative dentistry. The beautiful restorations of our Varneys and Webbs will soon pass away and be looked upon as a lost art if the matrix is not kept from the hands of dental students. It is one of the rocks lying in young men's paths which will surely wreck them if not avoided. Many of our experienced practitioners have discovered that the place for the matrix is limited, if a perfectly constructed filling be the object. To Drs. Jack, Brophy, Guilford, Woodward, Miller and Herbst we are indebted for our best patterns of matrices.

Fillings when completed, so as to thoroughly restore the natural contour, should be given an enamel finish.

For restoring cutting edges of teeth, gold and platinum combined is the best material.

Outside of amalgam, plastic fillings are to be deprecated, except for temporary work in tiding over certain periods in the mouths of young people, or for the capping of pulps. Since our present method of so successfully treating pulpless teeth has come into use, many practitioners have not attempted the task of saving exposed pulps in teeth of matured formation. The Morey drill has been of great service in this line. By the use of cocaine hydrochlorate there need be no pain of any consequence; the

root or roots being thoroughly cleansed, are syringed with a solution of mercuric bichloride in hydrogen peroxide (one grain to the ounce), thoroughly dried with hot air, bibulous paper cones, or the galvano-cautery. A few fibres of cotton wound around a delicate broach and covered with chloro-percha solution is passed through the entire length of the canal, giving the very dry sides of it an opportunity to suck in the solution. A solid cone of gutta-percha is then forced to the end of the root and packed home with chloroform, and over this a small amount of oxyphosphate is placed, and the tooth is ready for permanent filling, everything being performed in one sitting.

In materia medica, hydrogen peroxide and mercuric bichloride have thoroughly displaced carbolic acid and creosote, accomplishing the additional benefit of ridding us of their vile odors. Cocaine has found a permanent place in our cabinet, and antipyrine is looming up as a very serviceable remedy in controlling neuralgic spasms. We have not yet discovered a specific obtunding agent for sensitive dentine. In this direction Dr. Ottolengui has recently reported some very wonderful results, reporting no failures in about fifty cases. The method of procedure is to use an ether spray directly against the dentine, having first thoroughly dried the cavity with blasts of hot-air.

For using remedies we very frequently have to have recourse to the hypodermic syringe, a form of which lately introduced by Dr. Dunn, of Chicago, is a great improvement, where no great force is required. The atomizer and spray are also in general use.

The treatment of pyorrhoea alveolaris has made rapid strides during the past few years, and to-day the presence of this disease is no longer recognized as a legitimate pretext for the extraction of a tooth. In the treatment of this affection, seeing that the teeth are clean, which means a great deal, is the first step. Then follows the procedure of thoroughly washing out the pus pockets with a germ destroyer, for which purpose nothing surpasses the mercuric bichloride and hydrogen peroxide mixture. This is immediately followed by strong stimulating treatment as a paste made from crystal carbolic acid and caustic potash, to be followed with a soothing dressing of glycerine and tannic acid, which is in most cases all that is required. The most difficult types of this

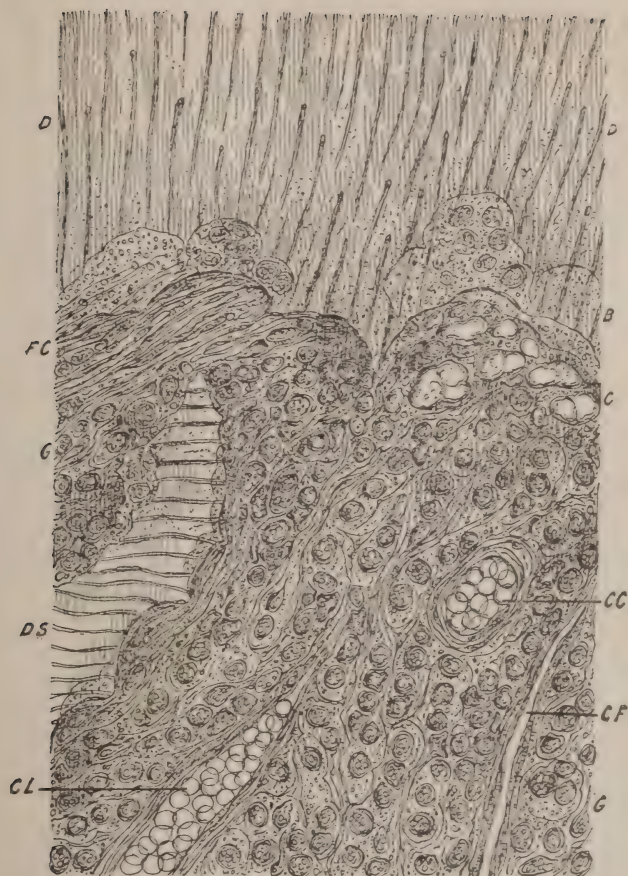


FIG. 1.

IMPLANTED TOOTH, ANDREWS'. EXTRACTED AFTER $1\frac{1}{2}$ YEARS $\times 150$.

DD—Dentine of root.

B—Bay-like excavation in dentine, near corroded border.

DS—Shreds of dentine, detached and corroded.

FC—Fibrous connective tissue, filling the flat bays of the dentine.

GG—Granulation tissue of myxomatous structure.

CL—Capillary blood-vessel in longitudinal section.

CO—Capillary blood-vessel in oblique section.

CC—Capillary blood-vessel in cross section.

CF—Capillary blood-vessel in formation.

disease to treat successfully, are those where the roots have lost a large portion of their attachment, for in these cases excessive motion prevents all attempts of nature at reproduction of tissue. The chairman of your committee has successfully demonstrated the fact, that in these apparently incurable cases, all that is required is to assist nature by holding the teeth in an immovable position, when reproduction of tissue is as certain to proceed as in the milder forms of the disease. The binding wire and all forms of ligation are not only uncleanly and too temporary, but permit a certain amount of motion which in these aggravated cases is just sufficient to prevent the permanent adhesion of the new protoplasmic formations. To insure success, unite a sufficient number of the teeth together permanently and the desired object is attained. The case presented before the First District Society in January has since steadily improved, and we trust to show the same at one of the clinics next winter. Since then we have performed the operation on two other cases with equally gratifying results. We have also received communications from various men who have adopted this treatment successfully, so that we can at this day safely recommend it as the proper method of treatment of the severest types of pyorrhoea alveolaris.

Implantation of natural teeth has received a great amount of attention during the past year, and many are to-day extensively engaged in the practice. The present outlook is however very gloomy as to its becoming an operation of any permanent value. We have heard its wonderful success heralded all over the country, but in truth there can be no permanent success recorded in so short a time; even in the wonderful result portrayed in this month's *Cosmos* by Dr. Curtis of your committee, Dr. Black has shown that the ultimate dissolution of the root substance had commenced. Already the numerous failures of many reported complete successes demonstrate that the end of the illusion is approaching, and the operation will soon be a thing of the past. The microscopical examination of the tooth removed from Dr. Younger's mouth, also reported in this month's *Cosmos*, clearly demonstrates that in this case absorption had taken place similar to that which we find in the shedding of a deciduous tooth.

At a special clinic of the First District Society held on October 15th, 1886, Dr. W. J. Younger implanted an inferior central

incisor in the mouth of Dr. C. L. Andrews. This tooth has since been under continued observation by the chairman of your committee. It became very firm soon after being inserted, and changed its color to conform to the other teeth, as they all do. It was a typical case of success, and we have seen many experts deceived in picking out the implanted tooth. Dr. Andrews, a dentist himself, felt quite proud of the result, and everything pointed to a long continued usefulness of the new member of his inferior maxilla. But about September, 1887, he first noticed that the tooth was getting a little loose. This he attributed to an injury received in eating corn, and ligated it and gave it every other attention; but it grew from bad to worse until, on February 21, your chairman extracted the tooth and immediately placed it in a weak solution of chromic acid. It was at once taken to the laboratory of Prof. Carl Heitzman, and left with him for microscopical examination for the benefit of the report of this committee. Prof. Heitzman gave the specimen his careful attention, and returned to us four of the best sections, and india ink drawings of two of them ready for publication. His report of the specimens is as follows:

“NEW YORK, April 8th, 1888.

The root of the implanted tooth which you brought for examination a few weeks ago appeared to the naked eye reduced to about one third of its original size. The reduction was caused by deep erosions and irregular cavities that have replaced the original tooth tissues, viz: the cementum and the dentine.

“After the tooth had been softened in a chromic acid solution, the root was cut into thin slabs, and the appearances, under the microscope, were as follows: The dentine is corroded almost around the whole periphery of the root. Only in one place can a trace of cementum be seen. The bordering line of the dentine, toward the excavations, is fluted and made up of crescentic lines, corresponding to bay-like excavations, which follow in varying sizes in large numbers. The dentinal canaliculi, in which the dentinal fibres are still recognizable, terminate abruptly along the concave borders of the bays (see B, Fig. 11). Here and there apparently closed spaces of varying sizes are seen at the eroded borders of the dentine. Both the small and large bays and the spaces are filled with a myxomatous granulation tissue

(see G G), in which numerous partly wide capillary blood-vessels run, mostly filled with blood corpuscles (see C L). In places where the bays are shallow a delicate layer of fibrous connective tissue is seen attached to the dentine (see F C). The myxomatous tissue holds in many places globular masses of lime-deposits (see C); and in some places are seen debris of dentinal tissues (see D S), with irregular, eroded contours, still holding dentinal canaliculi, and obviously having escaped dissolution. Along one surface the bays appeared to be filled with coagulated serum of blood, in which blood-corpuscles and isolated medullary corpuscles were suspended; here evidently hemorrhage had taken place, immediately before the removal of the tooth, that led to the destruction of the granulation tissue. The pulp chamber is lined mostly by primary dentine; a small portion, however, shows the formation of secondary dentine of the ordinary variety, with scanty and irregular canaliculi. Both the primary and secondary dentine border the pulp chamber with globular masses, pierced by dentinal canaliculi, but showing nowhere excavations like those at the periphery of the root. Toward the apex of the root, where the corrosion of the dentine is most conspicuous, the pulp chamber has disappeared, and the dentine is eaten away to such an extent that only thin ledges of it are seen. The process that has led to such an advanced destruction of the root is the same as that which brings about the absorption and destruction of the roots of temporary teeth before shedding.

(Signed)

DR. C. HEITZMAN."

Other forms of oral surgery, such as treatment of antral abscesses, alveolar abscesses, removal of carious and necrosed bone, for the relief of facial neuralgia, are all receiving more attention in dental practice than formerly. Special surgical instruments fitted to the dental engine for the purpose are now to be found in the majority of dental offices.

Prosthetic Dentistry is not backward in the grand progress made by our profession. One fact has, however, deeply impressed itself on the minds of your committee. The very best sentiment of the profession has been loud and definite in its decision, except in extraordinary cases, that non-conducting materials should not be used as a base for upper dentures. While the upper celluloid and rubber plate has been so severely condemned, its man-

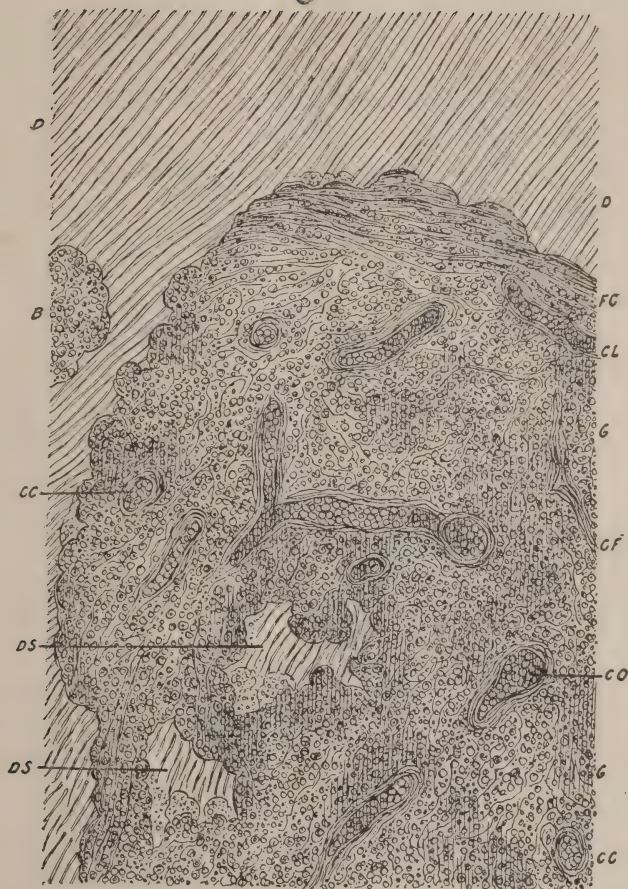


FIG. 11.

IMPLANTED TOOTH, ANDREWS'. EXTRACTED AFTER $1\frac{1}{2}$ YEARS $\times 500$.

DD—Dentine of root.

B—Beginning formation of bay-like excavations.

DS—Shred of dentine, detached and corroded.

C—Calcareous deposits in granulation tissue.

GG—Granulation tissue myxomatous structure.

FC—Fibrous connective tissue filling the flat bays of the dentine.

CL—Capillary blood-vessel in longitudinal section.

CC—Capillary blood vessel in transverse section.

CF—Capillary blood-vessel in formation.

ufacture seems to remain just as extensive, and the consequent detriment and injury to the public just as great.

Bridgework, where justified, has come into very considerable favor. It is, however, a subject of great dispute in the profession to-day. Like everything of value, it is overdone. The dentist who believes that there is but one and only one perfect method of bridgework is like his extreme opponent, who condemns the use of bridgework in toto. The one sees his bridge as the only panacea for every one who comes along, the result being he does more harm than good. The other sees only the cases which have resulted in disaster, consequently he condemns the entire procedure. Of all operations in dentistry not one demands such perfection and accuracy in workmanship as a properly constructed bridge. How few of them possess it; and as a result we see so many people going about with mouths so foul in odor that all their friends prefer to keep them at a distance. The so-called cleansing spaces of bridgework are a delusion. The teeth must set firmly against the gum, and the palatal or lingual contour should be perfectly developed. Where practicable, nothing surpasses the porcelain bridgework of E. Parmly Brown. Properly inserted, your committee has seen an expert deceived in picking out the bridge from the adjoining teeth. Its permanency has been tested for some years and not found wanting. With our improved continuous gum furnaces the manufacture of these bridges has become very easy.

In crownwork, every passing day brings its changes and improvements from the simpler forms of crowns like the Logan and Brown to the more difficult ones backed and contoured with gold. Like its more complicated fellow, bridgework, an imperfectly placed crown soon has much trouble in store for the poor patient doomed to wear it, and we may be pardoned for changing an old saying into, "heavy the root that wears such a crown." The pus-laden pockets, blind and fistulous abscesses by the thousand, cry out against such a debasement of a noble work.

Labor-saving devices in the shape of electric, water, gas and condensed air motors are in very extensive use, but for many who can not make use of these means, a great boon has been received in the rubber wheels, rims and foot-pads for the dental engine devised by Dr. C. S. Wardwell.

The report of your committee is necessarily but a mere synopsis, but it is hoped that the points touched upon will lead to a discussion which will only be beneficial to our society.

PROCEEDINGS OF SOCIETIES.

ILLINOIS STATE DENTAL SOCIETY.

The twenty-fourth annual meeting of the Illinois State Dental Society was held at the Opera house, Cairo, Illinois, May 8, 9, 10, 11, 1888, and was called to order by the President, Dr. C. B. Rohland. Forty-four members were present at roll call, and during the entire meeting of the Society about 150 dentists were in attendance. Mr. Reed Green was delegated by the mayor of Cairo, to extend a welcome to the Society. This having been done, Dr. C. R. E. Koch, of Chicago, responded as follows:

MR. GREEN, LADIES AND GENTLEMEN:—By the partiality of our esteemed president I have been detailed to respond to the cordial greeting the people of the historic city of Cairo have so eloquently extended to this society through you. Permit me to observe, sir, even at the sacrifice of my reputation for modesty, that no member of this society is better able to appreciate your kindly welcome than myself.

I was once a dweller among you, though never having had the freedom of this goodly city extended to me. Nearly twenty-six years ago I paid a special assessment here. Together with some 950 other fellows, who brought their baggage on their backs, I arrived here in August, 1862. Mine Host of the St. Charles hotel, unlike Mr. Parker, had no rooms reserved for us, but we were invited to hospitable beds on the bottom-land enclosed between the Ohio and Mississippi levees, just the other side of the Halliday house, and we were told to make ourselves comfortable on the downy surface of old mother earth, which two days previous rain had rendered particularly soft and pleasant for repose.

We were a band of Young Men's Christian Association men, and of scions of the board of trade of Chicago, and at once sent up a prayer for straw. In the language of the present day it would be said "we kicked for straw." Our prayer or kick was

effectual. The straw was providentially forthcoming and we were at once no longer to fame unknown. That great army of the Tennessee, of which we soon became an integral part, knew us ever, up to the time of our peaceful dissolution as the Straw Regiment.

One of our guards on a bright moonlight night, saw a Cairo bovine approaching him. Having been instructed to challenge anything that might approach his post, to shoot if the challenge was unheeded, he pulled the trigger of his Fremont Belgian rifle. The dead body of the quadruped was the result of its disobeying the command to "Halt!" The next morning the members of the guard, of which your humble servant was a member, were called upon to stand a per capita assessment to reimburse the owner of the animal. This was not done merely because the man made a terrible fuss about the matter, nor from fear of punishment, but simply because the principles of the Board of Trade and Young Men's Christian Association of Chicago, were so strongly rooted in our consciences, that we felt justice had to be done, even though it cost us half a dollar a piece.

Sir, it will perhaps be a surprise to you to hear me assert my claim to being the oldest Cairo dentist in this city. My office in 1862 was in a row of sheds, situated perhaps twenty rods to the south of the Halliday. Uncle Sam was the landlord and I paid no rent. A camp-stool was the operating chair, a cracker box (one of the B. C. kind) was the table, and six or seven pounds of steel instruments, a book of tin-foil and a bottle of amalgam, comprised my outfit. The business was not very lucrative or extensive, and really the success of those operations is still problematical. One of my patrons of those days has become one of the most noted evangelists of this country. It may seem like conceit, but somehow it has always impressed me that there was a connection between my Cairo dentistry and his evangelistic career. Permit me to assure you, sir, that these men you see here are more skilled than I was, and should you fall a victim to their science you would be in no danger of becoming a preacher, although it is not altogether improbable that it might make you a senator.

There are a number of our members here, sir, who remember your city as it was during those years that tried men's souls, and

who believed that times of peace would sound the death-knell to the progress and prosperity of your city. In this we were glad to see that we were mistaken. Providence has given to your city the key that unlocks the majority of our inter-state water communication from the Alleghanies to the Rockies, and to the Gulf of Mexico; and when congress shall have wisdom sufficient to create a channel that shall connect your river commerce with the Gulf of St. Lawrence, there is no doubt but Cairo will still continue to grow and prosper more and more.

Somewhere I have read in sacred or profane history that " 'Twas here the Queen of Sheba came to Solomon of old," with a load of spices, pomegranates and fine gold, and when this lovely point she saw, her heart was filled with joy; she straightway said she'd like to be the Queen of Cairo, Illinois.

We are glad to be in Cairo; many of our members feared to come so far, but coming has taught us all a lesson of the extended wealth and importance of our state. With Cairo in the extreme south and Chicago in the north, to say nothing of St. Louis in the west, it does not seem that Illinois can take anything but a leading position in the commerce of the nation.

This society is now twenty-four years old. During this time it has met annually at different points in the state. Its sole aim and object has always been to increase the standard of attainments of its members in order that they might be able to give more comfort to suffering humanity. Unlike trade unions and many other societies, the question of "The Mighty Dollar, and How to get it in Large Quantities" has never entered in its deliberations. No corner on dentistry has ever been organized by it, nor has it ever undertaken to say how long its members should labor or how large fees they should collect.

In the 4th chapter of Genesis it is recorded, "And Abel was a keeper of sheep and Cain was a tiller of the ground," showing stock raising and farming to be the most ancient of callings. The good Book speaks of many special fields of labor and usefulness, but dentists are compelled to confess that theirs is a comparatively modern calling. In the brief life it has had, its votaries have, however, frequently silenced and overawed emperors and prelates; the pulpit and the farmer are alike dumb when reposing in our

chairs, and the fascinating and irresistible accents of woman's melodious tongue are frequently hushed into painful silence by us.

With all this latent potency we are, notwithstanding, an exceedingly mild-mannered and peaceful set of citizens. I pray you sir, assure the good people of Cairo that when we go from here our labors for this year ended, we shall take with us the recollection of time profitably and well spent, and that their kindly greeting and hospitable attentions contributed in no small degree to the success, comfort and enjoyment of our meeting.

The Secretary's Report showed that with the accessions made last year to the roll of members, and with the loss by removal, non-payment of dues, etc., the gain in membership was seven, the active membership at the opening of this meeting was 136. At the close of the meeting the membership had grown to 147.

Dr. C. B. Rohland, the president, delivered an address, of which the following is an abstract: * * * This is the first time in the history of the Illinois State Dental Society that it ventured into "Egypt" for the purpose of holding one of its annual meetings, and much benefit will be derived by the dentists of Southern Illinois as well as by the State Society by this commendable action. Of the 200 or more dentists of Southern Illinois, comparatively few are members of the State Society, and but a very limited number have ever taken any interest in matters pertaining to the profession. The influence of society meetings is twofold: first, it awakens an interest among the public as to matters relating to dentistry; and 2d, the dentists of the section where the meeting is held are interested and benefited thereby. A session entirely for the benefit of the public would prove very beneficial, and one evening should be devoted to the education of the people where the meeting is held. It is remarkable and discouraging to note how ignorant the general public is on dental matters; dental service would be better appreciated were they better informed. The subject is a difficult one to deal with, and it is important to decide how the best results could be attained. Much of the education imparted by individual dentists has done good, but very much indeed is entirely useless. If popular sentiment aided the labor of dentists, more good could be done, and dentistry would be elevated even more rapidly. How to further the interests of education

among the people is an important question to answer. The dentist falls short in accomplishing his mission, and in doing his duty, unless he systematically teaches dentistry to his patients. The patient should be taught to realize that the services of dentists are comparatively worthless unless the work receives the subsequent attention and care which should be bestowed on it. Almost every contact with a patient, when in professional intercourse, should be made an opportunity for benefiting the patient. Dentistry should be taught in local institutions, in the free schools, even in the kindergarten; especially should the children be thoroughly educated. Section 2 of the American Dental Association has this subject under consideration, and it is hoped that some benefit may be derived from its labors. Articles should be published in the daily prints—that class of articles which are designed for the benefit of our patients being selected from our dental publications. This can be done without in any way violating professional ethics. The people should be made to realize the dangers to which they are exposed by their own neglect, and of the loss which they suffer thereby. Societies ought to take a particular branch of dental science, and give that particular subject the principal attention. If different societies would thus follow up different subjects, our store of knowledge would be materially increased. Text books on dentistry should be published and used in the public schools.

Important events have transpired since the last meeting of this society—events which have been of much importance to the profession. The resolution adopted by the American Medical Association last year has raised dentistry to a higher standing. The Ninth International Medical Congress, with its section on Oral and Dental Surgery, has brought dentistry into closer bonds with medicine, and having been the best section of the congress, has made a lasting beneficial impression on dentistry. Our closer attachment with medicine will have an elevating influence; a union with medicine is not essential, but our closer relationship adds to our responsibility and correspondingly increases our importance.

The efforts to sustain the patents on bridge and crown work should be systematically, strenuously and unitedly opposed

by the dental profession. This class of monopolies is the most baneful to the interests of dentistry.

Next year, the twenty-fifth anniversary of the society should be celebrated in an appropriate manner; but instead, as suggested to make the affair an entirely social one, it should be made the best scientific meeting ever held by the society. The social features, of course, should not be forgotten; but the principal aim of the meeting should be to outdo all previous meetings in the amount of labor accomplished. It would be beneficial to the society to secure the attendance of some prominent operators at the future clinics of the society, and as it could hardly be expected that persons from a distance should bear their own expenses, the society should pay the expenses of these operators. The effort to give exemption from jury duty, of persons engaged in dental practice, is a highly commendable one.

The following resolution, on motion of Dr. Harlan, calculated to elevate the standard of education, was adopted by the society:

WHEREAS, the majority of dental colleges in the United States do not require of the student a longer period of pupilage than two years prior to the candidate coming up for examination, and

WHEREAS, the Illinois State Dental Society believes that the time spent in college or in the study of dentistry is too short for the proper preparation for entrance upon the practice of dentistry; therefore, be it

Resolved, that the National Association of Dental Faculties be requested at their forthcoming meeting in Louisville to adopt as a requirement for graduation that the student shall have studied three full years, including attendance on two full courses of college instruction in separate years.

The following named persons were elected corresponding members of the society: Geo. Cunningham, B.A., D.M.D., L.D.S., Cambridge, England; John E. Grevers, D.D.S., Amsterdam, Holland; J. G. VanMarter, D.D.S., Rome, Italy; M. M. Levett, D.D.S., Paris, France; E. Magitot, M.D., Paris, France; A. H. Sylvester, D.D.S., Berlin, Germany; Chas. S. Tomes, F.R.S., London, England; J. Walker, M.D., L.D.S., London, England.

In the absence of the chairman of the committee on Dental Science and Literature the report was read by Dr. Louis Ottofy

of Chicago. The following abstract embraces the principal points of the report: * * * We are not as scientific in things we do and things we say as we should be; our operations are not invariably successful and there is not complete harmony between our theories, practice and the results. Relative to the saving of exposed pulps, it may be said that if the effort to save alive this delicate organ renders it impracticable to secure a thorough preparation of the margins, and a sufficient freedom from carious dentine, either from fear of encroaching too much upon the pulp, or from the bulk of the pulp capping material when in place, the pulp ought to be sacrificed at once. The mere fact that the pulp is kept alive is not important unless it is thoroughly comfortable and well protected by a good durable filling. We all recognize the fact that many pulps, although alive in this sense that they respond to the changes of temperature, do not properly perform their functions and are a constant source of discomfort. Such pulps are of no value. Much as we value a living pulp, there are cases where devitalization is necessary preparatory to the insertion of a reliable preservative filling. This is necessary in some cases, where we could avoid the mechanical difficulties encountered in securing the filling, to satisfy the conditions deemed necessary to arrest decay. There are cases where it is merely a question whether the pulp should be devitalized at once, or whether it should be permitted to perish in the course of time. In these cases immediate devitalization is to be preferred. In regard to immediate root filling, we may say that the truly scientific practice will be found in the middle ground. Many roots may be cleansed and filled at once, but that all ought to be, only an extremest can maintain. Dependence must be placed on thorough instrumentation and an intelligent use of drugs. The method of attachment of implanted teeth is a matter of much interest. So far it is ascertained that no revivification of the dentine, cementum or pericementum takes place, and that it is most probable that the implanted teeth are held in place mechanically. That the operation of implantation can be performed with a good degree of success cannot be disputed, provided an operation be considered a success which lasts but a year or a few years at most.

Of eighteen cases reported by one operator, three were for

patients entirely unsuited for the operation, leaving fifteen whose prognosis might be considered favorable. Of these fifteen, twelve are absolutely firm and doing good service, while only three have failed. The ratio stands twelve successful to three failures, or 80 per cent. successes and 20 per cent. failures. The tooth longest implanted has been in place fifteen months, and all, with the exception of five, have been implanted one year and over. As to micro-organisms, it may be said that the study and time devoted to this subject has been of much benefit. For instance, it is a well known fact that before we were fully aware of the relation which these organisms bear to specific disease we frequently had unpleasant results in the treatment of pulp-chambers which contained post-mortem elements of pulps of teeth, which we do not now have, provided aseptic measures are observed.

In the portion devoted to literature it was stated that the lack of originality in dental periodicals was unusually prominent, that much reprinting is done and but few of the members of the profession are contributors; many who have the ability to contribute do not do so because of a lack of system and method in regard to literary matters, a condition greatly due to the peculiarly mechanical turn given to the minds of the majority of dentists by the practice of dentistry. A dentist should subscribe to at least three dental journals of his own country, should try them all, and then select those most suited to his tastes. Opportunities to write should not be allowed to pass unheeded. Notes should be made at the chair whenever matters of any consequence present themselves; these can be classified, and food for good papers is often obtained and retained in this way. * * *

In discussing this subject Dr. T. W. Brophy emphasized the necessity for an instrument wherewith roots may be prepared in such a way as to be perfectly fitted by a band. With the bicuspid this is a difficult matter, and he recommends the use of soft gold and burnishing it to fit the irregularities of the root. He objects to the immediate filling of root canals, and holds the opinion that much harm can be done unless much care and good judgment is exercised. He does not even care to fill the roots of teeth just devitalized, but prefers another sitting, so as to be sure to remove every portion of the dead pulp.

DR. A. W. HARLAN said that the portion of the report on lit-

erature was remarkable for what it did not contain, *i.e.*, no reference was made to the newer matter on dentistry, notably Dr. Talbot's Irregularities, Haskell on Mechanical Dentistry, Guilford on Nitrous Oxide, Rymer's Students' Note Book, and other works which had appeared during the year. The committee had failed as in former years, in leaving undone what should have been done. The duty of the committee was to report what was new, not to write an essay on practice.

DR. EDMUND NOYES thought the committee, while not reporting in full conformity with the objects for which it was appointed, had endeavored to present the clinical aspect of dental science. There are many diseases met in dental practice, which are due to pus formation; abscesses and pyorrhœa alveolaris belong to this class. We are now better able to cope with these affections than we formerly were, and this is undoubtedly due to our increased knowledge of pathology brought about by scientific investigation. The treatment of the whole range of diseases has become more simple as a result of the same stimulating influences.

DR. GEO. H. CUSHING thought the report of the committee fell short of what it should be, by not presenting to the society a list of the books published during the year, and by not pointing out clearly what literature would prove most beneficial to the dental practitioner. The portion referring to the literary advancement of dentists he heartily commended, and if put in practice, will certainly be of much benefit to the profession. The principal object of the committee in future should be to present concisely that which is new and valuable in dental science and literature.

DR. A. W. FREEMAN hoped the committee would in future be in a position to recommend to dentists just such books as are worth having; and if necessary the society ought to provide the means so that all dental works could be carefully reviewed by the committee and a report embracing the results of their labor be presented to the society.

DR. G. D. SITHERWOOD was of the opinion that a concise review of all recent literature was desired; that there is too much rehash in our dental journals, too much reprinting, and in fact, too many publications.

DR. J. W. WASSALL believed that additions to dental literature are not so numerous that dentists could not buy the books as fast as published. Every dentist should endeavor to add all new volumes on dental subjects to his library.

DR. J. J. R. PATRICK: We are making progress. If the committee, by having its work carefully criticised, will improve in the way it presents its report, progress has been made. Dental journalism falls very much short of accomplishing its work. The journals will publish anything and everything that is sent to them. They copy articles, one from the other, and as a result we have an amount of repetition that makes it useless to take many of them. I can read from all the journals what is worth reading in about one hour. Articles are published, no matter how long, short, good, bad or indifferent they are. Dental societies all over the country permit journals to make reports of their proceedings and then dispose of them to the subscriber. The subscriber pays for what the publishers take or get for nothing. There is here room for much improvement.

DR. LOUIS OTTOFY, in closing the discussion, admitted that a review of the works published during the year would have been of interest to the society, but that that kind of a report properly belonged to a national organization, and that whereas a section devoted to dental literature made an annual report covering this entire field, it would be simply a commission of the same fault—repetition.

The Committee on Dental Art and Invention then offered its annual report and in the absence of the chairman, Dr. J. Frank Marriner of Ottawa, read the report. A number of devices brought to the notice of the profession during the past year were enumerated, and of them the following may be mentioned: Knapp blowpipe; gold lining for rubber plates; Dr. A. E. Matteson's sandpaper disk director; Dr. O. Carpenter's clamp for holding rubber dam; Dr. James Bradley's adjustable matrix; Regulating appliances, by Dr. W. N. Morrison; Dr. John H. Reed's matrix; and Gould dental chair, the invention of Charles A. Rigdon of Warsaw, Indiana.

SECOND DAY.—MORNING.—CLINICS.

Wednesday morning, May 9, was devoted to clinics and the exhibition of new appliances. We noted the following: Dr.

Kitchen of Rockford, filled a cavity in a lower first molar, largely involving the mesial and grinding surfaces. The greater portion of it was filled with tin foil, gold being used to cap off with. His engine was satisfactorily propelled by an electric motor of the Belding Motor Co., of Chicago.

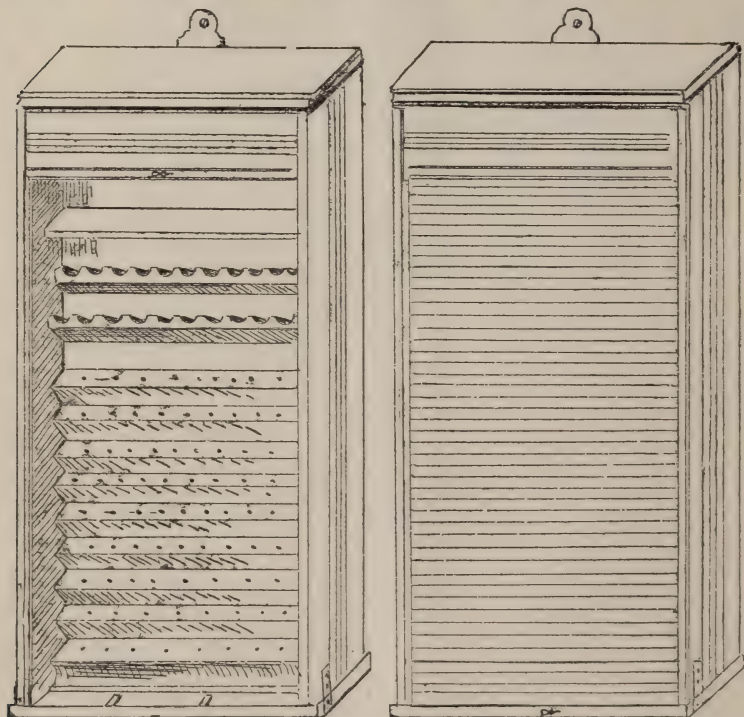
DR. JAS. W. CORMANY of Mount Carroll, made a large gold filling in a central incisor, using the Bonwill electric mallet, and performed the operation with extraordinary rapidity. In finishing, an excellent quality of French emery paper disks, made by Hood & Reynolds, of Boston, rendered that part of the operation more than usually easy.

DR. D. B. FREEMAN attracted many about him to witness the application of his several ingenious appliances.

DR. THOS. L. GILMER of Quincy, made and set a gold and platinum crown on a lower bicuspid with pulp living. A practical point was in the instruments used for preparing the root-end for the band. The sides of the root were cut parallel with engine bits of a three-sided pyramidal shape, the edges being sharpened on a stone. The sharp edges are pressed and rotated against the part to be cut; the band or ferrule for the root-end was fitted separately and composed of platinum, and the balance of the crown telescoped over it.

DR. W. N. MORRISON exhibited some soft rubber polishing points with a hard rubber hub. These can be easily made in the laboratory in the following manner: The dental depot will furnish the form of point it is desired to reproduce. Put a piece of brass wire three-fourths inch long into the hole of each. Imbed in a flask with the long end of wire down. Separate and take the rubber point out. It has only been used for the pattern. Slip over the end of the wire a disk of rubber which has been cut from a sheet of ordinary vulcanite with a harness punch. Now fill up with soft vellum rubber, placing another disk over the wire on top. Close the flask and vulcanize in the ordinary way. When the brass wires are removed the points can be used with the screw mandril with a plain conical point. Before packing, the mold can be modified to make any shape of point required. Dr. Morrison makes an inclined plane for regulating teeth by soldering a metal plate to a platinum band which is to be cemented on to the lower tooth.

DR. G. A. BOWMAN makes a very convenient holder for the sponge to be used on a lathe to wet the corundum by bending a piece of soft copper wire ten inches long to the shape of a hair-pin and fastening the free ends into a lead base. The loop will hold the sponge and can be bent to any position required.



We introduce illustrations of a case for holding engine bits. It has abundant space for classifying the burs, polishing stones, disks, etc., and is a neat bit of office furniture. It is the invention of Dr. A. H. Fuller of St. Louis.

DR. C. P. PRUYN extracted a left upper second molar and a left upper first bicuspid, using a hypodermic injection of cocaine into the tissue direct. The puncture was made midway between the apex and neck of the tooth, through into the periosteum covering the alveolus. Two injections were made, one on the external and one on the internal plate. The point of the ordinary hypodermic needle is shortened about one-half, so that it is comparatively blunt but still sharp. A 4 per cent. solution of hydrochlorate of cocaine

is used. As soon as the epidermis is punctured a drop of the fluid is injected, and the further penetration of the needle is thereby rendered painless. The point of the needle is carried upward and backward about a half inch, and at this point all the fluid should have been expelled. This in most cases produces a marked blanching of the tissues. The anæsthetic effect is immediate, and lasts from ten to thirty minutes. Dr. Pruyn recommends the use of cocaine in this manner in painful wedging, sensitive dentine and general surgery of the jaws.

AFTERNOON SESSION.

The feature of the Wednesday afternoon session was Dr. Patrick's paper, entitled, *Dental Morphology and the Etiology of Irregularities*. The following is a brief abstract of it:

All morphological and physiological changes that take place in the development of different parts of the body are identical with those that commenced the life history of the animal. All organized beings are developed from simple cells, which are rendered productive by being blended with dissimilar cells. This blending results in a parent cell, which in turn becomes embryo, foetus, child and adult.

In the evolution of the primitive cell we have, first, segmentation of the cell contents, forming two cellular membranes—the epiblast and hypoblast. Later, a third membrane, the mesoblast, forms between the two. These three membranes form the gastrodisk or germ area. The epiblast gives origin to the epidermis, epithelial lining of the cerebro-spinal canal, the cerebro-spinal system, and parts of the organs of special sense.

From the hypoblast is derived the lining epithelium of the alimentary canal.

The mesoblast is the source of the bony and muscular framework, connective tissue, blood-vessels, etc. It is difficult to understand why the tooth should be said to be developed from the epiblast and mesoblast, when the latter alone is known to possess all the constructive elements necessary for the production of a tooth, viz., bones, muscles, connective tissue, etc.

The fertilized cell is different from either its paternal or maternal cell. This truth is verified by the fact that a child will inherit characteristics of both parents. We see large teeth of one

parent, and small jaws of the other, transmitted to offspring. For the sake of studying the development of teeth, the homologue of the human jaws at a time when the first permanent molar is fully developed will be found in the young hog at eight or ten months old. If we then remove the lower jaw, zygoma and malar process, we expose a long puffy ridge, extending from the first permanent molar backwards to what will in time become the maxillary tuberosity. Removing the outer thin alveolar plate, you will discover the two cells of the last permanent molars in the saccular stage of development. Each sac is connected to the surface of the gum by its funicle—a prolongation of the sac called the epithelial cord. It is in the nature of an umbilicus, the sac being the placenta, and the same developmental changes take place as occur in the evolution of the mammalian embryo.

In the development of the sac the funicle enlarges at the deep end, becomes detached from the gum, and contracts upon the formed enamel. At the same time nutrient vessels from the surrounding tissues inosculate with those of the sac.

During all the developmental changes the sac is the formative membrane of enamel and cementum. In a morphological point of view the relations of enamel and cement show them to be homologous. Prof. Flower's diagrams of nerves depict the superior maxillary division of the fifth pair with its anterior and posterior dental branches, sending off filaments direct to each root-apex. This direct connection cannot be shown, however, by dissection. In this particular the diagram must be regarded as conventional anatomy.

Teeth of the lower jaw, however, are more directly connected with the nerve and artery trunks. This is probably due to restricted territory. The same cause prevents the development of supernumerary teeth in the lower jaw. Superdentition is most common in the upper jaw. Supernumeraries are not always anomalous in form and rarely are directly connected with the superior maxillary vessels and nerves, but have their supply from the surrounding tissue. They are sometimes found imbedded in the palate process with crown directed toward the alveolus. How can such teeth form direct union with the superior dental vessels and nerves? The temporary teeth are further evidence that a tooth germ can develop its several parts independent of special nerves

and arteries, for these teeth are supplied by deciduous vessels, are surrounded by deciduous bone, and are exuviated in course of time as useless material. A study of interrupted tooth development at certain stages yields useful information as to the series of changes by which the perfect form is evolved. A case was cited in which a lower right second permanent molar passed little beyond the saccular stage, enamel and cementum being formed, but little or no dentine. It caused no pain, though quite carious.

The discussion was opened by Dr. G. V. Black, who said: I confess I am a little puzzled how to speak on this subject. I am sorry Dr. Angle is not here, as announced, to open the discussion. Having only looked over the paper since twelve o'clock, I find that the essayist and I disagree. We look at the subject from different points of view. The general description of the ovum and its development is, as he says, given according to the books, and is probably correct. The formation of the epiblastic and hypoblastic layers are demonstrable, but we are not yet certain of the fact that certain organs are derived from certain layers; for instance, we are not yet certain that the kidney is derived from the mesoblast. But the main statements as to cell growth are correct. In regard to the origin of the nerves I wish to bear him out. The spinal cord is clearly derived from the epiblast (witness *spina bifida*), and some *fœtus*' will be born entirely devoid of nervous systems. I have examined the teeth of such a subject and found them developed.

My friend has taken a very peculiar view of this subject. Sections of specimens preserved in alcohol studied by microscope give us very much such views as he has described. The funiculus or umbilicus will in such specimens be plainly seen. It is what is known as the epithelial cord, described by Dr. Dean. I have seen no vessels in it. It breaks up later. If the specimen is macerated in alcohol the "cord" will be shrunk and may be lost out. So also the contents of the sac will be shrunk up until a partially filled sac remains. The speaker then gave a brief account of the origin and formation of the tooth germ as observed by the most recent histologists. Nasmyth has given us great trouble with his membrane. The sac is absorbed and Nasmyth's membrane and the cementum are formed by a new membrane. A new thing is done by a new

tissue is a law of physiology. The outer part of the enamel organ is removed as described by Dr. Sudduth, allowing the nerves and vessels to come down against the ameloblasts. In regard to this malformed tooth it is more than probable that if it was cut through, dentine would be found. I have examined many with this result.

In regard to supernumeraries in the lower jaw, I have seen a very few cases. One was an extra incisor. Another time I saw four molars on each side.

DR. C. C. CARROLL of Meadville, asked Dr. Black if he regarded supernumerary teeth as abnormalities or a tendency to a return to the prehistoric type when man had more teeth.

DR. BLACK. I regard them as mere vagaries of nature. I believe as Dr. Dean did, that it is the scattered debris of the epithelial cord that form a nucleus for the new tooth.

DR. TAYLOR. What is the reason that malformations and supernumeraries occur in the permanent and not in the temporary teeth?

DR. BLACK. That is a fact which I am unable to explain.

DR. TAYLOR. Will the teeth be perfect in their formation when there is no nerve connection?

DR. BLACK. I have found crypts with teeth partially formed in a foetus without a nervous system.

The discussion was closed by Dr. Patrick. He said that the homologue of the human being was in the lower animals, and therefore a good field of study. It is, I find, possible to take the sac and funiculus out of the jaw intact, and thus it can be held up by the latter it is so apparent. He cited authorities to substantiate the claim that the sac does not contain blood-vessels.

On Wednesday night a paper was read on

OPERATIVE DENTISTRY.

BY DR. OTTOFY.

The following is an abstract: Except on two occasions during the past seven years a paper on Operative Dentistry was given at each meeting of this society. The custom should be continued, and may be improved upon, by having a paper on prothetic dentistry also. The value of time should not be forgotten by the dentist in this progressive age, and no matter how busy or

idle he may be, the work in hand should be dispatched with precision. The cases presenting themselves should be studied with a special view of decreasing the amount of labor, and of shortening the time to the minimum. The practice of introducing contour fillings, involving half or more than one half of the crown of a tooth, is superseded by the use of either porcelain settings or entire porcelain crowns. Crowns for anterior teeth are made as simple as possible; the less gold is visible, the more harmonious the appearance. For some years I have used the Logan crown, with the improved pin. In selecting these teeth, it is very important to secure one which will require the least possible grinding. When these crowns break the fracture is generally in those cases where considerable of the crown has been ground from the palatal or lingual surface. The trade does not provide proper shaped teeth for this purpose, and the dentist is obliged to shape them according to the various needs. As a rule, the root should be encircled by a well fitting gold band. This should be snugly adjusted to the root, by first being made just a little smaller than necessary; it is then either stretched with suitable pliers, or by being forced on a cone-shaped piece of steel until it assumes exactly the proper size; a little oil will assist in its ready adjustment. All the parts being perfectly dry, the band is dipped in a thick solution of chloro-percha and forced upon the root. Within this band the crown is fitted to the root with oxyphosphate. For the posterior teeth, the all-gold crowns are beyond question the most serviceable. There are many suitable devices for making gold crowns.

Nothing new as to the use of gold for filling has become known to me since the last time this subject was discussed in this society. I use cohesive and non-cohesive gold separately, or in combination, as the case may require. There is no doubt that much better and more permanent fillings can be made with non-cohesive than with cohesive gold. The method of covering margins with non-cohesive gold, and the most exposed parts of the filling with cohesive gold, is a good one. The margins of cavities are injured by the amount of pressure necessary to properly condense non-cohesive gold oftener than we suspect. The idea that a cavity must be plugged as tightly as possible has undoubtedly led to much injury. Both kinds of instruments, with deep and shallow serrations, are necessary; the deeply serrated ones to be used in

condensing the non-cohesive gold, and the shallow serrated ones for the cohesive gold. With little practice the skill to secure a union between the cohesive and non-cohesive layers is readily acquired; of course the union is entirely mechanical and must be thoroughly accomplished. Small cavities should be filled entirely with non-cohesive gold, and hand pressure exerted principally in a lateral direction, or at any rate only light taps of the mallet are required. For large contour fillings cohesive gold is preferable, and the skillful combination of the two will yield the most satisfactory results.

A few words as to the use of tin and gold for filling. This combination has now been tested sufficiently to prove beyond a doubt that it has a legitimate place in dental practice. In anterior teeth, where the cavities extend beyond the margin of the gum, to points where from any reason it may be impossible to properly fill or finish, it is the *sine qua non*, for it is readily introduced with sharply serrated pluggers, and where not accessible to sandpaper or cuttlefish disks or strips it may be finished with smooth, flat burnishers with the utmost facility. In teeth, where the structure is much below the average, these metals combined are of great advantage, but they should be used at the cervical margin only. The advantages and good qualities are counteracted in a very slight degree, however, by discoloration; care must be exercised to not permit a filling of tin and gold to extend to any point where it may be visible after the teeth have resumed their normal positions. Discoloration, confined to the combined metals alone, rapidly follows. I do not approve of tin and gold, or tin alone, for those difficult buccal cavities of the molars, for which gold and tin has been recommended, because copper amalgam is far more preferable. The latter can be introduced more readily; its discoloration is not more objectionable, and it can also be worked under moisture.

A better acquaintance with amalgam has led many who strenuously opposed its use to look upon it with more favor. The period of experimentation has long since passed, and the necessity for care in the introduction of amalgam being recognized, less negligent work is done with it; hence, amalgams yield more satisfactory results. It is not material which of the better class of amalgam

is used, provided it is properly mixed, introduced, condensed and finished.

The use of properly adjusted matrices has made it possible to perform better operations at less expense of time and labor. Careful observation in many mouths, having both gold and amalgam fillings, has led to the impression that good, conscientious operators do not generally give that scrupulous care and attention to plastics which is bestowed on gold. This is often evident; for instance, when the cervical margins of gold or amalgam fillings are examined after the separation of the teeth, the latter will often be found to project beyond the border, to show either the file, cotton or other finishing material marks and lines; while the gold will generally have a smooth, powder polished or at any rate a burnished surface.

It has often been said, and it bears reiteration, that amalgam fillings, as a general rule, should be finished at a second sitting. There is no doubt that physical changes occur during the setting of an amalgam filling, which may alter its form or even position to some extent, and this alteration is in progress for many more hours after the introduction of the filling than would permit of its being finished on the same day. An exception to the rule might be made in the exceedingly small fissure cavities in the molars and bicuspid. The approximal surfaces should be contoured whenever possible. The cervical margin and the filling at that point ought to be polished with the sandpaper disks and polishing powders as carefully as gold. At the time of the introduction of the filling, all loose fragments should be removed from about the mouth by the operator; these particles of amalgam, if allowed to remain, often float back, become attached to the filling or the approximal surface, and the finish of the filling is made useless.

Lately, copper amalgam has received considerable well-merited attention. A number of fillings under observation yield variable results. I have placed it in mouths where no other kind of fillings were inserted, have placed it along with other amalgam fillings, in mouths where were already gold and amalgam fillings. The change of color has been variable; in some cases entire discoloration of the copper amalgam being the result, while in others it remains bright and smooth. In cases where a number

of different metals were used, the principal complaint made was in regard to the marked metallic taste, especially when sour food was eaten. In one particular instance, where four months ago forty cavities were filled, twenty with amalgam, eleven with gold, five with copper amalgam, and four with oxyphosphate of zinc, the metallic taste has continued at all times; the patient is not aware that copper has been used, but claims she is conscious of a coppery taste at all times. The five copper amalgam fillings are very large and are in the second and third molars. The greatest advantage from the use of copper amalgam is derived when it is employed in saving those molar teeth whose cavities extend below the margin of the gum, are so difficult of access, and almost impossible to keep dry; it unites particle to particle, and sets fully as well under moisture as when dry.

Gutta-percha and oxyphosphates have retained their past usefulness and popularity as suitable filling materials for temporary purposes. Oxychlorides (except when not to be exposed to the fluids of the mouth), I believe, have been entirely abandoned.

Recognizing the demand for a suitable filling material as readily introduced as are the gutta-perchas and oxyphosphates, the American Dental Association appointed a committee last year to consider whether the association shall offer a prize of \$500. for a dental cement which shall most nearly approximate gold in resisting the action of the secretions of the mouth, and most nearly approach the color and non-conductive properties of the natural teeth.

When introduced as temporary stoppings—not often necessary—they should be finished with a view to permanency, because frequently patients neglect attending to teeth filled in this way, as soon as they should.

Gutta-percha is generally resorted to on the approximal surfaces of the teeth, especially of molars and bicuspid, for separating teeth, occasionally for retaining medicaments in diseased or pulpless teeth, and for pressing out of the way the soft tissues that may extend into a cavity.

Another important branch of dentistry to which I desire to call your attention for a few moments is the treatment of pulpless teeth, especially those which are, or have been, affected with alveolar abscess. Within the last few years a good deal has been

said in reference to the immediate filling of the roots of pulpless teeth, irrespective of the previous condition, and possibly a lack of proper discrimination as to the suitableness of particular cases has led to unfavorable results. To treat and fill at one sitting the root canals of any tooth whose pathological condition is not fully understood, is absurd, and if persisted in must be followed by unfavorable consequences. Abscesses with fistulous openings are readily treated, and usually prove permanently successful.

In the treatment of abscesses the use of powerful drugs—which in addition to destroying diseased portions also destroy the healthy tissue—should be carefully avoided. Remedies which cleanse, and destroy germs, are generally less unpleasant to use and are fully as effective. We should also studiously avoid over-treatment.

The necessity of saving all pulpless teeth if they promise a reasonable amount of service must never be overlooked.

To retain the vitality of an irritated, inflamed or exposed pulp is one of the most delicate operations a dentist is called upon to perform; it is an operation which calls for the exercise of much judgment, and yet is most frequently followed by unfavorable results. It is my practice to endeavor to save the pulp in all cases presented if the patient is under fourteen years of age. At this period of life the possibilities of retaining the vitality of the pulp are most favorable, and only as age increases do the chances decrease. Here, too, avoid overdoing during treatment; prevent, if possible, pressure on the pulp, and cap with non-corruptible pliable substances. If the exposure is of but very short duration and has not given much pain, the removal of foreign substances, washing with tepid water and dusting with iodoform, can be immediately followed by capping with several thick layers of chloro-percha and oxyphosphate of zinc. Before endeavoring to ascertain the condition of a tooth pulp, flood the cavity with bichloride of mercury, one in five hundred, it having been first dropped on a warm slab, to prevent a shock. Remove all decay. Do not wound the pulp unless pus is present; if this is the case, puncture and allow the pus to escape, wash with eucalyptol, dust with iodoform and cap immediately. Pain should not follow the capping of exposed pulps. When the inflammation of the pulps has been of some days' standing and the pulp is

engorged, care must be taken not to permanently seal it too soon; generally two or three treatments will suffice.

In conclusion I need but call your attention to the use of matrices and separators; their intelligent application saves time and insures better results. Nor must we forget the various ingenious appliances now manufactured to be used with the much abused engine. Well chosen sandpaper and cuttlefish disks will save time in finishing and polishing; so will brush-wheels, rubber disks, rubber-corundum disks, wood points, chamois and celluloid disks, moose hide, sole leather, rubber cups and many other of these appliances; they should be always at hand and employed to best advantage. These revolving instruments are less objectionable to patients, perform the operations more rapidly, and yield better results. A careful consideration of these subjects in the form of discussion is the principal object of this paper, and for that purpose I now leave the matter to your consideration.

DR. WASSALL opened the discussion.

Dr. TAYLOR said, he preferred gutta-percha for capping pulps because it is more kindly received by the tissues. He uses it also for deep cavities on buccal surfaces. Cements he thinks are injured by incomplete mixing, and by continuing the use of the burnisher after crystallization has begun.

DR. CROUSE. I would like to speak of how to treat patients when they first come under my care. The most important point to learn is, what has been the cause of the caries. It will be found to depend on the care that has been given to the teeth, temperament, etc. The condition of your patient's pocketbook must also be considered, for we can not find one plan that will be suitable for all. The first operation should be a simple one. It is a chance to study your patients. Show them the true condition of the teeth with hand-glass, floss silk and instrument, showing collection at the neck that *can* be kept away by the brush if properly used. In most boarding schools for young ladies, and in polite society, it is unfortunately and foolishly considered not good form to use the tooth-pick. Suppose a case comes showing a good deal of "Arthur's separating," making the patient to chew on the gums; if then you can teach the patient habits of cleanliness, restore the lost parts of the teeth, you will win the gratitude of your patient.

If your patient is careless and you can not rouse his attention, it makes little difference what filling material is used; it will result in failure. To induce habits of cleanliness is the greatest service the dentist can render his patient.

Separators: Parr's is the best I know of; it will answer in most cases. The use of separators has greatly reduced the habit of prolonged preliminary wedging in my practice. Great caution is necessary in their use, however. Sandpaper disks are a great saving of time and energy in finishing fillings.

Tin and gold: There are many members who remember my advocacy of gold and tin years ago. I do not use it as much now. I find the tin to deteriorate, becoming powdery in many cases. I use instead a soft gold cylinder made by myself. I feel more sure of them. I like the foil that can not be made cohesive by annealing. Since we have been refining gold at our office I find that many of the foils in the market are impure. The "velvet" of S. S. White is not to my liking. I had an ounce of it at the urgent request of a friend, but disliked it exceedingly. I like Kearsing's best. Dr. Cushing and I used heavy gold up to No. 240. It makes good fillings but takes too much time. I use No. 10 folded about eight times for heavy work to get the same effect.

THIRD DAY.

Thursday morning was devoted to clinics.

DR. A. W. HARLAN treated a case of pyorrhœa alveolaris, removing salivary and serumal calculus from fourteen teeth in the lower jaw and from the right upper first bicuspid, which was the only tooth affected. Pockets were found extending down the side of each tooth, and these were thoroughly cleansed with peroxide of hydrogen, after which a solution of bichloride of mercury, tartaric acid and water was injected. In the pocket on the side of the upper tooth iodine trichloride (the newest and most potent of disinfectants) was injected. Dr. Harlan also exhibited some of the most recent improvements in instruments by European manufacturers, among which were a set of chisels invented by Dr. W. Mitchell of London, England; an electrical hot-air syringe of Berlin make, and some long right and acute angled spoon-shaped excavators that seemed to be destined for considerable

usefulness. Among some of the recent drugs added to our pharmacopœia, exhibited, were the oil of cade, sozoiodol, iodine trichloride and ethylate of sodium, the latter being very destructive to fungoid growths.

DR. J. G. REID filled a distal cavity in a first upper molar, with tin and gold, using the Brophy matrix, and preparing the cavity by the aid of the Belding electric motor.

DR. T. W. BROPHY filled the right upper second bicuspid distal cavity with gold, placing tin and gold at the cervical margin, and using the Brophy matrix.

DR. E. D. SWAIN filled the right upper cuspid (compound shoe and proximal cavity) for Dr. J. F. Marriner, using cohesive gold, Williams' cylinders.

DR. J. A. DUNN exhibited his medicinal syringe, in cleansing and treating, for Dr. W. H. Chilson, a first upper bicuspid, that had fistulous openings on buccal and palatal surfaces.

DR. A. D. PENNY had on exhibition an electric vibrator for painless extraction.

DR. CARROLL opened the flask containing plate cast the previous evening, and demonstrated the success of his method by the perfect casting.

DR. KEITH of St. Louis, exhibited a novel contrivance for removing cotton from the point of a broach in applying medicaments to root canals.

DR. PATRICK had on exhibition a large model illustrating his method of regulating, also the stamp and dies for making gold crowns, invented by him, demonstrating its usefulness by making and mounting a gold crown for the same patient operated upon by Dr. Gilmer, and completing the operation in about one and one-half hours. Dr. Patrick also showed an appliance for protecting the gum from the engine point during the dressing and shaping of roots, the instrument also acting as a guide while beveling the sides of roots. A new porcelain crown with platinum base was presented at this exhibition by Dr. Patrick, and was the subject of a lecture by the inventor at the Friday morning session.

MR. J. S. COYLE exhibited a set of cast-iron dies for stamping and forming crowns, invented by Dr. Wick.

DR. PRUYN extracted the teeth of a number of patients, using hypodermic injections of cocaine as a local anæsthetic during the

operation. The result of this clinic proved not only the usefulness, but also the dangerous character, of the drug, and attracted much attention.

DR. W. N. MORRISON replanted a lower first molar that had been extracted at Dr. Pruyn's clinic, first removing the pulp and filling root canals with chloro-percha, and the crown with copper amalgam of Dr. Ames' manufacture.

THURSDAY AFTERNOON.

DR. W. B. AMES read a paper on "Amalgams," of which the following is a brief abstract:

I do not intend arguing for the recognition of amalgams as a filling material. I am a champion of the plastics, but do not embrace all the doctrine of the "New Departure." A clear definition of certain tenets will lead to a better understanding of the most essential points of the New Departure theory, and I have revised the most familiar as follows: Just in proportion to the difficulties of making a filling that will check and hold in abeyance tooth destruction is the use of gold contra-indicated; with this as an article of faith, a case presented gives rise to the questions: What is the quality of the tooth structure? and, What is the nature of the difficulties to be overcome?

By recognizing these conditions, and your personal abilities and shortcomings, together with the knowledge of the characteristics of the different materials available, the eclectic practitioner decides upon the method of procedure. Easy manipulation of a material of stability of form, sufficient density to withstand attrition, and of a nature to insure harmonious relations with the surroundings, (not necessarily electrical) is the solution of the question of practical tooth stopping. In gold, in certain cases of easy accessibility, etc., we have such a one. But in the numberless operations, there are many which have not accessibility, tooth structure, etc., which will permit the use of gold. Tin and gold in combination is closely allied to the plastics, in that, on account of the sliding of the layers upon each other, its manipulation and adaptation is easy, and the peculiar change taking place (from primary and secondary galvanic action, I consider it,) transforming it into a homogeneous mass. This material is limited, however, to a few locations, and in appearance is little better than the blackest amalgam. Gutta-percha is only reliable where there is

little attrition, tinfoil the same. Cements, although valuable adjuncts, are not reliable for permanent results.

In amalgams we have almost every requisite necessary for a perfect filling, and my experiments in the mouths of patients as well as by varied laboratory researches confirms my belief that we have amalgams which fulfil all practical requirements. To the investigations of J. Foster Flagg are we indebted for our knowledge of the characteristics of the metals which enter into the composition of amalgam. In amalgams with an excess of tin we get a bulging or spheroiding; in heavily silvered amalgams, crepitation; and in certain proportions of metals with copper, very little change, even when carelessly manipulated.

I have recently made a number of tube-tests, having flattened tubes, using only such alloys whose composition is approximately known. Among the conclusions arrived at were that a good moisture tight filling can be made by a careful use of any of the higher grades, and in some of the lower grades, I find that a heavily tinned amalgam will change its form in proportion to the thorough amalgamation, *i. e.* continued trituration, and thorough homogeneity increases the tendency to spheroid form. This observation, however, strengthens my theory that silver and copper in an alloy controls form, by becoming only partially amalgamated, the solid particles acting as braces and preventing the form change. The crepitation in silver amalgam can be accounted for in the same manner. Pure copper amalgam, according to the same theory, must be an excellent filling, as the individuality of the copper molecules is not destroyed by the mercury, and we get soft particles of copper with an amalgam surface, the unamalgamated part of the molecule acting as a brace against its neighbors. By studying the combining weights, specific gravity and chemical equivalence of the metals used, this theory receives further support. In regard to platinum amalgam—not an alloy, but amalgamated platinum—my observations led me to believe it to be possessed of several good qualities. It remains permanently plastic; therefore in combination with other metals it is very useful to impart a tough, leathery aspect to the mass, and it also seems to hasten crystallization. Amalgamated platinum with just enough gold to harden it, does not give a surface color in the mouth that will justify its use. With palladium precipitate enough to

harden, I find a gray mass that hardens rapidly. My greatest work in the line of amalgams has been with pure copper amalgam. Beginning its cautious use in 1881, I have, by observation of the results, become imbued with a faith that has grown with its use. It is with the admixture of copper and platinum amalgam I have obtained the most valuable results, using it experimentally in proportions from 90 per cent. copper and 10 per cent. platinum, to 90 per cent. platinum and 10 per cent. copper. When used in certain proportions it hastens setting to such an extent that it can be burnished and trimmed at the time of insertion. The surface color of copper amalgam can be improved by washing with alcohol while mixing, thus removing the oxide formed by overheating. Palladium amalgam, sets altogether too quickly for practical manipulation, but when mixed with other amalgams it hastens their setting in proportion to the amount used.

In regard to the evaporation of mercury, my experiments showed that at a temperature of 150 F., continued for twenty days, a large mass of amalgam with an excess of mercury, and a shallow vessel containing 1 oz. of mercury, neither had lost any perceptible fraction of a grain in weight; thus the theory of the volatilization of mercury at ordinary temperatures does not seem to hold good, and the chemical action upon mercury in the mouth is *nil*. The experiments of Dr. Taggart have also been repeated by me, and I failed to arrive at results at all conclusive to his theory. The same experiments have been conducted by Dr. Clifford Mitchell, and with the same results as mine.

DR. TAYLOR in opening the discussion said: We have heard the results of a number of experiments by the essayist, and should feel grateful for his efforts in this direction. I believe that all metals in a fluid condition have a tendency to globular form, and amalgam is not an exception, and herein is one of the causes of its failure as a filling material. The limitations of amalgam are three: first, the tendency to spheroidal form; second, color; third, lack of edge strength. Faulty manipulation has much to do with the failures of amalgam, and here I do not agree with the essayist in regard to the rubbing and squeezing. A lack of mercury in mixing amalgam produces a sandy edge to the filling, and a surplus of mercury gives a soft pasty edge that is soon brushed away, and either of these faults will cause trouble. Thorough trituration is

necessary in preparing the material for filling, and tapping will help to condense the filling. I believe that an amalgam filling is benefited by the breaking up of its crystallization, which may be done by a rubbing motion of the burnisher. Copper amalgam is wonderfully good in keeping its form, but in cases where failures had occurred the fault lay in the overheating of the filling material. The excess of mercury in a copper amalgam should not be removed by adding tin foil, as may be done with other preparations, for it causes a rough, pitted surface on the filling.

The place to use copper amalgam is in the teeth of young children, or in adults with soft or imperfectly formed teeth, and also in cavities difficult of access. The formation of the cavity is the great essential to success, in this as in other filling materials.

The report of the supervisor of clinics was then read and discussion on it together with Drs. Ames' and Ottofy's papers followed.

DR. CROUSE questioned the advisability or safety of using cocaine to the extent advocated by Dr. Pruyn, and advised all young practitioners to hesitate in adopting the drug for general use.

DR. SITHERWOOD said, that he should regret to see the State Society indorse the use of cocaine in the manner indicated by the clinician, for the formation of the cocaine habit is so easy, and the results so disastrous, as has been proven by the reports of medical men. In regard to the use of the matrix in filling cavities easy of access, he deprecated its use, and thought more thorough work could be performed without it. He also advocated the use of the automatic mallets—in place of the hand mallet, as easier and quicker operations could be performed.

DR. OTTOFY criticized Dr. Morrison's method of replanting the molar tooth of the morning clinic. It had been done without any attempt to remove the dried blood from the tooth, and no antiseptic precautions had been taken beyond wrapping the root with paper during the filling. He thought an antiseptic wash, or even a little water would have proved beneficial. He had abandoned the use of cocaine, after having experiments with it for some months, and the results of the operations at the clinic only demonstrated

to him more fully the total failure of the drug as an obtundent for general use by the practical dentist.

DR. MORRISON, in reply to Dr. Ottofy's criticism of his operation, said he feared microscopic bugs, but not to the extent suggested by the previous speaker, and had not used the Mississippi water for that reason, yet he did not believe in powerful drugs as antiseptics. He had tried both methods—with drugs and without—and with equal success. The case in discussion was not a favorable one, as the outer border of the alveolus had been fractured, but with care the tooth would be of service for some years. He had used cocaine in a few cases, but was not favorably impressed with its action.

DR. C. N. JOHNSON said he did not agree with Dr. Ottofy in regard to it being not advisable to use tin and gold in fissure cavities in children's teeth; on the contrary he thought it necessary. In regard to the drilling of vent-holes in pulpless teeth, he thought there ought to be no need for such criticism, and yet it is really required. In the use of matrices he did not approve of the broad band which obscured the cavity, but when needed used portions of watch spring, cut into lengths of about half an inch. These take but a moment to insert and save time, etc., in drilling retaining points.

DR. CROUSE said he did not approve of the matrix for general use, and as to the saving of time in making retaining points, he thought if the cavity had been properly prepared there was no need of such. With a flat base and slightly narrowing sides, three cylinders properly placed will form good anchorage. He does not think it necessary to use ligatures, and the bad results, such as periosteal inflammation, should warn us against their use. Tin and gold in shallow cavities should not be used, as the force of mastication will force the fillings out. Gold can be used just as easily.

DR. PRUYN. The cases in which cocaine had been used illustrated both sides of the question. If he could believe what the patients had said, the majority had proved successful. About the last patient; he saw before operating that the case was just the one to illustrate the unfavorable results of the drug, and had administered it to that end, and to exhibit the proper remedies. He does not think the drug as dangerous as it is believed to be

by some of the profession, and for that purpose, is compiling statistics for presentation at some future meeting. The drug should be used with care, and with the proper remedies at hand in case of unfavorable symptoms.

DR. A. W. FREEMAN said that he feared that in some cases we only saw the temporary effects of cocaine, and was rather inclined to the belief that evil results often followed. He used as a local anæsthetic crystals of menthol, alcohol, and a little chloroform, with good results.

In filling with gold, retaining pits are a thing of the past, for if enough gold is used at the start, placed in position—not malleted—the rest is easy. Care should be taken in malleting, so as not to split the tooth by too great force.

DR. MOODY said that the difficulty with the country dentist was in not being able to get the proper remuneration for large gold fillings, and often tin and gold can be used with just as good results as gold. In crown cavities it can be made to last just as long as gold, but at the margins of proximal cavities it is not quite as strong.

DR. NEWKIRK. I can speak from the standpoint of both city and country dentist. There is a good deal of force in Dr. Moody's argument. Fees play an important part in influencing persons as to the kind of filling they want. In amalgam, it is not so much the kind, as the way it is used. A perfect amalgam filling should remain absolutely undisturbed until hard, and this may be done by the use of the matrix, which may be left in position till hardened. I make a band matrix for each case, and use thin sheet copper and soft solder. I mix the amalgam very dry and pack it thoroughly. By the aid of the matrix contour may be restored. I think the metallic taste of copper amalgam an argument against its use.

DR. LAURENCE discoursed upon the various subjects at some length, after which the subject was passed.

DR. MOODY then read a paper on "Some main points touching the conservative treatment of teeth whose pulps are nearly or quite exposed." The following is an abstract:

"Without entering deeply into the pro and con of this subject, I intend to give my method of treatment. The conservative treatment of the teeth has, of course, some relation to the pulp—

to save the tooth and at the same time to save the pulp. A large percentage of the teeth we have to do with are of faulty organization. My experience with cavities in teeth that are white, chalky, with friable enamel, disintegrated dentine, and a leathery mass occupying the bulk of the cavity, has been that in immediate filling in such cases metal is, to borrow a phrase, 'incompatible with tooth substance,' in fact, that it is the worst material with which the tooth can be filled at the first.

"In case of near exposure of the pulp in this class of teeth, thermal and mechanical reasons preclude immediate filling with metal; to which add that indefinite quantity, 'incompatibility.' The happiest results will often attend the flowing of oxyphosphate of zinc over the floor of cavities in these teeth, and then completing the filling with tin and gold; but often this method fails to arrest decay for any length of time. The factors in the cause of failures are: first, a lowered vitality; second, frail tooth structure; third, micro-organisms, and fourth, a sensitive pulp. In regard to the first, as medical men we should advise systemic treatment. As dentists, every effort should be made to get an understanding of the cause of the frail structure, the office and growth of micro-organisms, and the treatment of inflamed pulps. If pulp inflammation of a low degree exists, treatment by any of the well-known remedies is indicated before attempting to fill the tooth. The integrity of the tooth requires conservative treatment of the pulp, but this is not secured without some kind of a filling that is non-irritant, moisture tight, a non-conductor, having compatibility with the tooth structure, and at least some degree of permanency, and these conditions exist only in gutta-percha and cements. In the preparation of cavities secure space to work satisfactorily, keep the cavity dry, use gutta-percha at the cervical margins so that the integrity of the cement may not be destroyed at this vulnerable point. Use oxyphosphate of zinc for the wearing surface and coat the filling with chloro-percha or sandarac varnish until crystallization is complete. My reasons for this process are, that experience has taught me that in time the teeth become harder, resist the tendency to decay, and bear contact with metal fillings far better than if the metal is inserted at the first sitting. The pulp loses in a marked degree its sensitiveness to thermal changes, the leathery substance over the pulp hardens, and a gen-

eral recession of the pulp or a deposit of secondary dentine may take place.

"In cases of a low state of inflammation, malleting, as an exciting cause, may produce fatal results.

"Oxyphosphate of zinc is not irritating to the pulp, except in rare cases, and I differ from the gentlemen who use varnish, etc., before flowing oxyphosphate over the pulp. The pulps do not need protection from oxyphosphate, and the varnish precludes the very thing for which I use the cement. I find it is tolerated by tooth substance and pulp better than any other material, and is not so dangerous to the vitality of the pulp as many seem to think; but recollect, I take no chances with forlorn hopes."

The essayist proceeded to compare his experiences with those of Dr. Miller of Berlin, as reported in the *Independent Practitioner* for February, 1885, and followed with statistics of and results from 537 cases in which his method of using oxyphosphate had been applied.

Of these, 243 had been filled about a year and then permanently filled, when the the following results were shown: In 230 cases the pulp was in good condition; 5 contained dead pulps where not expected, and 8 where the case had been marked doubtful.

In 190 cases filled with oxyphosphate about two years and then filled permanently, 179 were in good condition, 6 dead where not expected, and 5 where marked doubtful. In only one case do I find record of a dead pulp under a gold filling which had replaced oxyphosphate.

In 91 cases with oxyphosphate in over two and with an average of three and one-half years each, a large proportion have been replaced with metal fillings.

I do not claim great permanency for oxyphosphate fillings, but I do claim that by its use frail teeth become harder, the pulp is better protected, and the tooth placed in better condition for the reception of the permanent filling.

At the evening session Dr. W. A. JOHNSTON read a paper on "What shall we do with inflamed pulps?" before the discussion of Dr. Moody's paper was opened. The following is an abstract of the paper:

This question constantly confronts us, and like Banquo's

ghost, it will not down. Every one knows how to treat an inflamed pulp, but the man who has had no failures in his practice probably has no practice. In the first place, inflammation of the dental pulp is like any other inflammatory action, in that it is attended with the same symptoms, viz: redness, swelling, heat and pain; is followed by the same sequelæ, and may terminate in the same manner—by resolution or mortification. In the second place it is unlike other inflammatory processes, because of its location in the center of an unyielding substance, its lack of absorbents to carry off inflammatory products, and its liability to have its blood supply shut off, as in strangulation.

An inflamed pulp means toothache, and the cause of the trouble usually indicates the remedy. Fungoid growths should be removed before treatment. Irritation from the presence of pulp-stones may sometimes be relieved by the use of a counter-irritant, as capsicum, etc., or the tincture of Jamaica dogwood may be used. Bleeding the pulp by puncturing it with a properly cleaned and shaped instrument is very effectual and speedy. Inflammation as the result of thermal changes or pressure is relieved by protecting the pulp with a non-conducting and non-irritating substance; but systemic treatment is often necessary to save the life of an imprisoned pulp. A saline cathartic or a mustard pediluvium will often effect a cure. Local applications of counter irritants or the use of the lancet will tend to induce resolution.

Lanolin, on account of its ready absorption by the soft tissues, is a good vehicle for applying topical remedies. If measures fail in aborting inflammation, devitalization is indicated. An irritant poison should not be used at once, but one of the many volatile stimulating drugs to relieve the pain, first syringing the cavity with warm water. If we had an agent to relieve pain and at the same time remove any exudate, we should have the pulp in proper condition for the arsenic. I have used trypsin for this purpose, but it has not proved satisfactory. Warm air will relieve pain, and if our remedies are warmed before applying, the patient will be saved much pain. At the present time the use of escharotics on pulps or in pulp-canals is not considered good practice, and to apply an escharotic before the arsenic, defeats our own plans. Stimulants are indicated in congested pulps. Quinine

may be administered as an aid to relieving the parts, but its tonic effect on the nervous system is more helpful than from any direct action on the blood. In devitalizing pulps the greatest success has attended the use of

Arsenic,	-	-	parts 1,	} to remain in 24 hours.
Hydrochlor. Cocaine	"	"	4,	
Lanolin,	-	-	" 5,	

The soothing effect of cocaine is more marked by combining it with lanolin, the effect being magical. The capping of pulps that have been inflamed is of doubtful expedience, and patients do not like failures.

DR. A. W. HARLAN opened the discussion on this paper by saying the essayist had treated the subject in a manner befitting its importance, but at the same time could not fully agree with him in his conclusions. That all inflamed pulps should be destroyed he believes to be erroneous. The teeth of young persons should be saved as far as possible, and especial care taken of the first permanent molars and all the incisors. As to the destruction of inflamed pulps, efforts should be made to preserve the life of the ten anterior teeth, especially in the mouths of women; but he does not have much hopes for those pulps that have suppurated or ached for any length of time. After twenty-five years of age there is less prospect of good results from the capping of pulps that have been inflamed.

The combination of arsenic, lanolin and cocaine is a good one and should be in every dentist's medicine case. The value of a blister as a counter-irritant should not be overlooked, and the suggestion of using warmed remedies meets with his hearty concurrence. In cases where it is deemed advisable to save pulps, if the congestion is marked, constitutional remedies may be used to deplete, but in general practice they are of little value. Puncturing the pulp, applications of iodoform, etc., and the covering of the pulp without pressure, will produce satisfactory results; but avoid the use of escharotics. He does not favor immediate capping; the insertion of a temporary stopping over the medicament for a few weeks will prove beneficial. If desirous of saving the tooth of any young person, the plan laid down by the essayist may result in success.

DR. CROUSE, in discussing Dr. Moody's paper, said he was

disappointed in the view taken by the writer as to the results of his experiments. He does not believe in "incompatibility of metals with tooth substance," for he has seen the dentine harden under gold, tin and amalgam fillings. It is a part of nature to restore dentine, and the part of pulps to resist decay. In soft teeth he objects to the use of cements, and prefers to use tin or amalgam as a temporary stopping. His experience with cements had proven them to be very temporary in character and he used gutta-percha entirely, if there was not too much wear upon the filling. In capping pulps, he used for the preliminary treatment a saturated solution of carbolic acid and oxychloride of zinc in place of oxyphosphate, first forming an eschar with carbolic acid. The capping of pulps is one of the most delicate operations in dentistry, and although occasionally a death occurs, this method proves more successful in his hands than any other. As a temporary filling material gutta-percha is better than cement, but better than either, is tin. The mistake made in capping pulps is by not covering enough.

DR. WASSALL said, years ago all dentists capped with oxychloride, and with success; later oxyphosphate seemed to be the better material. One phase of pulp disease not touched upon by the essayist is hyperæmia or simple congestion; it is difficult of diagnosis, but usually presents with a neuralgic pain not definitely located; the presence of a sore tooth will, however, solve the difficulty. The heat test for proving the vitality of a pulp is not always trustworthy, as in teeth with dead pulps the expansion of gases may cause pain.

DR. GILMER suggested the use of the mustard plaster of commerce, in place of those bought at dental depots, cut into strips of the size required, as a counter-irritant. He thought cold the best test of a pulp's vitality.

DR. CUSHING said he only wished to emphasize what had already been said in regard to the use of oxychlorides. At one time he capped more pulps than ought to have been capped, and later the failures began to present themselves, and he thought these failures due to the use of oxychloride, so began to use oxyphosphate, until convinced that oxychloride was the better material for this purpose. The careless manner of capping is the cause of failure; the cement should be quite liquid so as to prevent pressure. The secret of success in capping pulps is good judgment.

DR. TOWNSEND asked Dr. Cushing what he used before capping, and Dr. Cushing replied, copal-ether varnish.

DR. MORRISON cited a case of successful capping with oxychloride, in his own mouth. His method is to bathe the cavity with wood creosote for a few minutes, followed by thin oxychloride of zinc, drying with bibulous paper. In cases of congestion as the result of malarial influences, care should be taken not to drill into live pulps.

DR. HARLAN spoke of the importance of the treatment of exposed pulps before capping. The proper preliminaries to be observed, such as the application of the rubber dam, the cleansing of the cavity with warm water, and the enlargement of the opening, will help the dentist in his decision as to the advisability of capping or devitalizing. Copal-ether varnish, he said, is non-irritant, non-yielding, and aids in preventing inflammation from the contact of the pulp with oxyphosphate or oxychloride.

DR. SITHERWOOD suggested the capsicum plaster of commerce as a counter-irritant.

DR. KEITH asked the question: "When the cavity is varnished what is the advantage of one cement over the other?" He uses aconite in place of counter-irritants.

DR. NOYES said that inflamed pulps should receive the same method of treatment as any other inflamed tissue, as antiseptic precautions, and protection from heat and cold. He does not think aseptic measures can be used in these cases, but antiseptic measures are used with success. All the methods are successful if skill and thoroughness is exercised. As to the use of escharotics, their use was seldom indicated, and he preferred non-escharotics.

DR. TOWNSEND stated that when heat and cold tests failed he used the rhigolene spray.

DR. TAGGART asked if there are objections to the use of carbolic acid on account of its power to coagulate albumen, why use a solution of the bichloride of mercury as a dressing?

DR. CUMMINS said he used as a dressing for exposed pulps, creosote for one half minute, then following with a mixture of

Chloroform, gtt. 20,	} Placed on cotton upon the pulp and sealed with copal- ether varnish for twenty-four hours.
Cocaine (4% sol.) gtt. 46,	
Morphia sulph., grains $\frac{1}{2}$,	
Oil cajeput, gtt. 2.	

He also uses carbolized olive oil or glycerine, and in extreme cases punctured the pulp.

DR. HARLAN said this would only be a mixture, as the chloroform would not take up so much water.

DR. STEVENS said he had never seen a case of successful capping of an exposed pulp, and did not think it possible.

Subject passed.

DR. L. P. HASKELL sent a paper to be read, entitled, "Some Difficult Cases and their Treatment," which elicited the following discussion :

DR. SWAIN, in opening, the discussion said this branch of dentistry seems to be neglected at the meetings of our state society, yet it is a subject of great importance. He regretted that the dental student was so often the victim of erroneous teaching while at college, for this must be overcome before he can become practical. The securing of a good impression is the first and great essential, and for this purpose plaster of paris is the best, except in cases of soft flaps along the line of the arch, when an impression in wax should first be taken, so as to crowd back the soft parts. The projecting soft parts may be cut away from the model, and wax added to the line of arch. No absolute rule can be laid down as to what shall be used for taking impressions, but good judgment is required.

The great difficulty of making satisfactory partial lower dentures, unless under very favorable circumstances, proved the necessity for some interest being shown it by the profession. He would not hesitate to use clasps in lower dentures, even if he knew that they would injure the teeth, for he believes the comfort of the patient for several years to be an important matter.

Continuous gum work is no doubt the handsomest and finest work done, but its weight often renders it useless. Rubber has its place, and cast metal plates also ; but the practitioner must discriminate in their practical use. As to extraction, we are often warranted in extracting sound teeth where it is needful to secure comfort to the patient.

In the articulation of dental substitutes, the rules laid down are almost universal, but the observing dentist cannot always repress his feelings when he gazes on the fearfully and wonderfully made objects that often pass for artificial dentures. The dentist

should spare no pains to secure the most natural appearance and the greatest comfort to the patient.

DR. AMES said he thought the practice of extracting sound teeth unjustifiable except in very rare instances, and then entered into a criticism of the essayist's operations in the cases recorded.

The paper was also discussed by Drs. Taylor and Freeman, after which the subject was passed.

FOURTH DAY—MORNING SESSION.

After the transaction of miscellaneous business, a paper was read entitled: "Making and Tempering Dental Instruments," by Dr. J. F. Marriner. The following is an abstract:

The making and tempering of dental instruments appears to be looked upon by many as an exceedingly difficult operation, and one which very few know anything about. The facts are, it is a very simple, useful and valuable accomplishment, one that every dentist *should* and may easily acquire.

An outfit suitable for the ordinary purposes of a dentist consists of a medium sized anvil, two or three properly shaped hammers of different sizes, and one of Fletcher's solid flame burners No. 46. This burner gives a flame free from smell, and of great power, works perfectly with any gas supply, and can be had for the small sum of \$2.00. With this burner and a good mouth blow-pipe, you will be surprised at the amount of work which can be accomplished. With an outfit as has just been described any dentist with a little practice, care and judgment, will in a short time be able to make quite a number of instruments perfectly adapted to his wants, as well as temper all his instruments, many of which were elegantly made by other hands, though not always properly tempered.

In forging, the first thing is to know what we want, and then proceed to forge the instrument, exercising care in heating, as, by over-heating, steel is injured; nor should it be hammered before the requisite amount of heat is obtained, nor too long after; also do not hammer too long on one side of the steel, but at every blow turn it, striking first on one side then the other.

Do not be too particular in forging as to size: be sure to leave it large enough for grinding; be exact as you please about the form, never use a file for this purpose, but hammer it into shape in every case. By so doing you will have an instrument compris-

ing greater toughness, more springy, and a cutting quality that will hardly be obtained by filing into shape.

I wish to impress this point upon the mind of the beginner, do not forge your instruments too small—better be all day in grinding; this is particularly important in the making of small instruments.

We now have our ideal instrument roughly forged, perfect as to shape, but larger than when finished. The next step is to remove the effects of the heat, making it thoroughly clean and bright by means of fine sand-paper, emery cloth, etc.; this must not be neglected at this point, and must be repeated at every subsequent heating until finished. The instrument is now ready for tempering.

With a solid flame burner, mouth blow-pipe, cold water, and everything in place, hold the instrument in the left hand, in or near the side of the flame, and with the blow-pipe throw a flame upon it, heating it evenly and at the same time gently rotating the instrument until it reaches a bright cherry red; then quickly plunge it into cold water.

With practice, care, and judgment one will soon learn to tell the exact temper obtained by its color when plunged into the water; however, should any doubt arise, one or two strokes of a file across the tempered steel will tell you instantly. Should the instrument prove to be too soft, clean it, and pass it through the flame again, carefully observing the heat for a higher temperature.

We have now an instrument forged and highly tempered. Remove the effects of the heat with sand-paper, emery-cloth, etc., being careful not to break it, as it is highly tempered and capable of little or no resistance. The next step consists in drawing the temper; bearing in mind now that the blade, neck and shank all have the same temper, and to make it useful we must draw the temper so as to give us a spring at the neck and shank without injury to the cutting edge, which is done in the following manner. Have the instrument clean and bright, so that the color can be instantly noted when the flame is thrown upon it; force the blade or cutting portion (whichever that may be) into a piece of clean soft pine block one or two inches square, and with

blow-pipe throw a flame upon the larger part of the shank, which will assume a light or deep blue color, just as the artist may desire.

If the cutting edge imbedded in the wood be small, carefully note the blue color as it passes up the neck, and stop it just before it reaches the wood; but if large let the blue color run to the wood, and there check it instantly. In drawing the temper of long bladed instruments, such as long thin scalers, or long bladed excavators, do not force more than one-third or half of the blade into the wood, leaving the balance of the instrument exposed.

Now with blow-pipe throw a flame upon the shank, and watch carefully the blue color as it moves down the shank passing over the neck, and as it strikes the blade be careful to arrest it in a bright straw color just before it reaches the wood; this will give us a spring temper throughout. You will remember that the instrument is larger than we wish, that is, the blade or cutting portion, and it is now tempered and too hard to file, which should never be resorted to in any case. Its size should be reduced by grinding upon a wet stone. The stone or stones should be evenly balanced and run perfectly true, and be kept constantly wet.

The first position of the instrument upon the stone should be made with care, being as you wish it to be all the way through. Now grind until your instrument is as thin and delicate as desired, always holding it squarely and firmly upon the stone, and never allowing it to rotate or tremble in the fingers. On removing it for any cause from the stone, be particular in returning it squarely and in the identical position it occupied before removing, and be careful to grind as evenly as possible. By this method I think you will have an instrument finely finished, very tough and springy, with a keen edge, and capable of great resistance, even when very thin and delicate.

DISCUSSION ON DR. MARRINER'S PAPER.

DR. CUSHING. The paper has given careful instructions, which if faithfully followed will surely yield successful results. Very many times it is of the greatest value to dentists, and especially to those residing in the country away from dental depots, to be able to make and temper an instrument suitable for the occasion and at moment's notice.

I suppose most dentists are in the habit of making over instruments. The instruments which I purchase at the dental

depots, in a majority of cases I am compelled to retemper; they are all beautifully finished but not properly tempered. There is not one man in ten that works in steel who fully understands the proper tempering of it. As an example: while engaged in mining some years ago, when the picks became dull it was our custom to take them to a blacksmith some ten miles away, notwithstanding there were many blacksmiths in the more immediate vicinity; but not one of these seemed to understand the handling and tempering of the steel pick as well as the man at a distance. In buying two separate lots of steel each will have to be handled differently; therefore, it is important and imperative that we fully understand the qualities of the steel by testing it, before attempting to utilize it in the making of an instrument.

The point essential to be observed in handling steel is not to overheat it; steel should not be heated much above a bright cherry red for forging; the steel must be turned by the hand during forging, which makes it more compact. With regard to hardening, the instructions which are most valuable I obtained from Corydon Palmer. You must heat the steel to the lowest possible degree at which it will harden; if not done properly the first time, try a little redder temperature until the desired result is obtained. In drawing the temper, run the the blue color completely up to the wood; a block of pine wood one-quarter inch square is large enough for practical purposes.

I wish to emphasize one particular point, and that is, we should have more delicate instruments to work with than the majority of us can obtain.

One word with reference in what to expect of the character to be obtained from an instrument here described: the tissues of the tooth will be *cut* down and not broken. These instruments are not expected to be ungenerously handled; have a good-sized whet-stone. The Arkansas stones such as are generally used are worthless in size; have a large stone, two by four inches, and keep the instruments keen, so they will cut like a razor and *not* like a hoe.

DR. AMES. What is the color of the point in the wood?

DR. CUSHING. There is no color.

DR. MORRISON. I am very much interested in this subject, and am glad to see it brought out in this meeting. The instru-

ments must be forged *exactly* as desired, and we must not depend upon a stone to grind them to the proper size. The advantage of the forging is the compressed point on the surface by the hammer.

I prefer cold water for tempering, and ice water temperature for hardening. To draw the temper, I embed the edge of the blade in a piece of block tin or lead, and hold the instrument in a Bunsen burner until a light straw color appears at the lead, and then plunge into water.

DR. CORMANY. For tempering instruments I plunge the points into a piece of soap.

DR. WASSALL. My method of drawing the temper in steel Swiss broachs is to place them in a Williams gold foil bottle and cork the bottle, cutting a slight vent on each side of the cork; place the bottles on a stove and heat them gradually. By this method we can observe from time to time the color, and thus obtain the desired temper.

DR. CUSHING. All authorities agree that instruments should be ground instead of being left forged.

Subject passed.

DR. J. J. R. PATRICK gave a brief and practical lecture on his method of making and mounting artificial crowns upon the roots of teeth. By the aid of maps and drawings, he demonstrated that it made no difference what tooth or root we dealt with, we were dealing with the base of a cone, and the further we go down with a band on the root, the less and poorer will be the anchorage.

All teeth have canals, or a canal larger or smaller, and it follows the shape of the external part of the root, and the further you go down with a square point for the purpose of enlarging it, the weaker the root is made. If a post is to be used at all, it should be tapering. If a band is perfectly fitted and properly applied, a post will not be needed once in a thousand times to assist in anchoring a crown. Subject passed.

At this point the Committee on Dental Art and Invention made its final report, reporting favorably upon the following appliances: Dr. Bowman's rubber cups and trays for taking impressions of roots for crowns and bridge-work. The Belding electric motor received considerable praise on account of its simplicity and requiring but little care for the battery; once perhaps in three months. The noise produced by the rapid revolutions of the motor is re-

duced to a minimum in this machine. The instrument case used for holding the equipments of a dental engine, and invented by Dr. A. H. Fuller, received a hearty commendation.

DR. C. C. CARROLL'S furnace and apparatus for casting aluminum received a strong recommendation.

DR. PARSON'S warm-air apparatus came in for due praise, as it had the appearance of practicability. On motion the report of the committee was adopted.

The hour having arrived (12 o'clock) for the election of officers, which was made a special order of business, resulted as follows:

President, Dr. Geo. H. Cushing; Vice President, Dr. J. J. Jennelle; Secretary, Dr. Garrett Newkirk; Treasurer, Dr. T. W. Prichett; Librarian, Dr. W. B. Ames; as member of the Executive Committee Dr. J. W. Wassall was elected; one member of the Board of Examiners was appointed, Dr. C. N. Johnson. Quincy was selected at which to hold the quarter centennial meeting the second Tuesday in May, 1889.

Society adjourned *sine die*.

EXTRACT FROM THE ANNUAL ADDRESS OF THE PRESIDENT OF THE
DENTAL SOCIETY OF THE STATE OF NEW YORK.

I put to a dentist of long experience recently this query, "What is the topic of most vital interest to dentists to-day?" and his reply was, "Shall we retain our independence as a profession, or shall we merge ourselves into the organizations of another?" And I answered him, "Are we not already merged? Was not the seventeenth part of a congress offered us, and did we not go there in hordes, and each one who had no degree confer upon himself the title of doctor, write it before his name, and immediately become a member of the medical profession?"

But I am only met with a smile of cynical incredulity, as my friend goes on to say that I must be simple-minded not to see that immediately the great congress adjourned we relapsed into mere dentists—that we were only medical men *pro tem.*, just long enough to be counted in the aggregate and to collect our ducats.

"Don't you know," said he, "that the ones who appreciated

that precious privilege the most belong to the very class that in this state we are trying to drive beyond our borders; that we would not permit them to become members of this society, but they can become medical men by the stroke of a pen, and then find rest in the bosom of their mother.

“As a scientific meeting of dentists, that gathering was inferior to some of the meetings of mere local societies; it has adjourned and passed away with only a ripple left to tell where it was, and to-day the status of dentistry is unchanged; we are as we were before: interested only in our own independent organizations, in which we can be vastly more effective.”

Let me continue this topic by saying that the agitation of this subject points inevitably to the formation of an International Dental Congress, sooner or later.

There is now going on an effort to create an opposition to such a congress, by trying to make it appear that it would be a rival of, or antagonistic to, a medical congress.

Such a view is forced out of all reason; there is no more conflict between them than there is to-day in this country between the American Medical Association, with its section of Dental Surgery, and the American Dental Association, which is made up exclusively of dentists. Neither interferes in the slightest degree with the freedom or usefulness of the other. It is folly to suppose that that section in the American Medical Association is going to supplant our American Dental Association; the temper of the dental profession will not permit it. And it is also folly to suppose that a section of a medical congress is going to satisfy the desire for an International Dental Congress. Organizations of dentists are too firmly fixed to be broken up and disbanded by merging into other organizations, and even if the future develop a tendency in that direction, it must be a later generation which will take kindly to the change. Sooner or later it is the duty of the dentists of the state of New York to take action on this matter, or throw away the prestige they now rightfully hold.

The Empire State has a larger number of dentists within its borders than any like area anywhere else in the world. It has a larger number of world-renowned men. It has more and better local organizations, and an *esprit du corps* unrivaled.

Some of its local societies have contributed more to the scien-

tific advancement of dentistry than any other like society in existence.

This state was the first to adopt and put successfully into practice a law regulating the practice of dentistry, and this state has to-day the best and strongest law that exists; and it was in this state that the idea of an International Dental Congress was conceived and publicly announced.

The eternal fitness of things points to this state as the place of all others for an International Congress, which shall be the first of a series which will be likely to continue when we and our acts to-day are forgotten.

Every sentiment of patriotic devotion to our profession urges us to stand by the organizations which we have spent a lifetime in building and maintaining.

We have achieved what we have in the face of obstacles which a less courageous and persistent body of men would have succumbed to. We are respected because we command respect; we shall command it still more by showing to the world that we are not ready to throw lightly away that which has cost us so much in acquiring. The antagonism to a dental congress looks unmistakably to the ultimate abandonment of all distinctly dental organizations, and merging them into sections of medical organizations.

Nothing could be more fatal to the two world-renowned societies in New York city—the Odontological Society and the First District Society—than to sink them into a section of the County Medical Society. Nothing would sap the vitality of the Dental Society of the state of New York so quickly and so thoroughly as to reduce it to a section of the State Medical Association.

Of this state society and its work I am proud. I am proud of being by your suffrages its president.

I am proud of you, my fellow-workers of twenty years, and when I leave this chair not to return again, let this my message, borrowed from another, ring in your ears:

“Stand by your Guns, Boys!”

THE DENTAL REVIEW.

Devoted to the Advancement of Dental Science.

PUBLISHED MONTHLY.

EDITOR: A. W. HARLAN, M.D., D.D.S.

ASSOCIATE EDITORS:

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LOUIS OTTOFY, D.D.S.

J. G. REID, D.D.S.
L. L. DAVIS, D.D.S.

THE ILLINOIS STATE DENTAL SOCIETY.

The members of the Illinois State Dental Society convened at Cairo, Illinois, on Tuesday, May 8, 1888. There were about one hundred members present and twelve new members were added during the session. Visitors were present from Kentucky, Tennessee, Missouri, Iowa, Pennsylvania and Wisconsin. It was one of the most harmonious and agreeable convocations of dentists that we have ever attended, and the interest was enhanced by the dispatch of business and the general good nature of all present. Most of the essayists were on hand and the clinics were admirably managed. The dentists of Southern Illinois turned out in force and several of them joined the society, with a promise of many accessions at the next annual meeting. The discussions were general and the published transactions will show that many good things were said and done by speakers and operators. The outlook for the future is most promising, and the officers for the ensuing year, with the standing committees, have promised that the quarter-centennial of the existence of the society, shall be celebrated in a manner becoming the past reputation of the society for good work, and the importance of continuing in the same line, for the next quarter of a century. Several movements, intended to benefit the whole profession, educationally, legislatively, commercially and professionally were inaugurated at this meeting which will, if acted upon in the proper spirit, place the profession of the State in the lead in making history, that will reflect honor and glory on the members of the society for all time to come.

NEBRASKA STATE DENTAL SOCIETY.

It is the policy of the DENTAL REVIEW at all times to lend any assistance within its power to any reputable dental organization, whose aim is to elevate the dental profession. Nebraska has a young but promising dental society; we were surprised to note at the recent meeting held at Grand Island, Neb. (of which a report will be found among our society proceedings), the activity of this society and the interest shown by the individual members. Nebraska has a population in the neighborhood of a million, with about two hundred and seventy-five dentists. The law regulating the practice of dentistry in the state is in some particulars more defective, than similar laws in other states, while in some particular directions it is a much better law than many states possess. The society is endeavoring to enforce the provisions of the law, but because no State Board of Dental Examiners exists, the successful enforcement is more difficult than it would seem, and hence the united effort of the profession of the entire state is very important. The State Society numbers about fifty members, of whom in the neighborhood of thirty-five were present; including the visitors those in attendance exceeded forty. The membership is composed principally of the younger element, and if we may judge from their interest and activity, many of them will be very useful members for a long time to come. The next meeting will be held at Wahoo, a short distance from Omaha; the officers elected for the ensuing year are as follows: President, H. C. Miller, Grand Island; Vice President, H. J. Cole, Norfolk; Corresponding Secretary, J. J. Willey, Wahoo; Recording Secretary, I. W. Funk, Beatrice; Treasurer, W. H. Stryker, Beatrice.

HONORARY MEMBERSHIP.

Dentistry has attained a position, when the conferring of honors, by its schools and societies should be less promiscuous than in the days gone by. That an honor may be acceptable and appreciated it must always be worthily conferred, otherwise the recipient can not entertain that respect and esteem in which every dental college and society should be held by dentists. We have recently known of the conferring of honorary membership on dentists who habitually violate the code of ethics of the society

which conferred the honor. Of course, all this was unknown to those who carelessly gave their assent to the election of the persons thus honored. A commendable progress in this direction was made by the Illinois State Dental Society a few years ago, and it is safe to predict that in the future no name will be added to the list of honorary members, unless it is the name of some one who is indeed an honor to the profession. At the recent meeting we were pleased to observe, that to be a corresponding member of the society is not a mere senseless formality, for membership was conferred only on men who have contributed to the literature of the profession, or who otherwise were worthy of the honor. The careless way of conferring the degree of doctor of dental surgery, *honoris causa*, is a thing of the past, and now it is time to put a stop to making every visitor at a dental society an honorary member thereof.

DEFERRED.

On account of the pressure of numerous reports of societies, we have been compelled to omit from this number several original papers and the editor's foreign notes, as well as other readable and instructive matter.

THE Illinois State Dental Society took a long step in advance when a resolution was passed requesting the Association of Dental Faculties to make three years of study, including attendance on two full courses of college instruction, in separate years, an indispensable requisite for all candidates who come up for graduation. Now is the time for other dental societies to fall into line and force the colleges to take notice that the profession is ready for this new departure in dental education.

DR. SITHERWOOD, in making some remarks on dental journalism before the Illinois State Dental Society, said that every journal could have good matter for publication if the matter was paid for. Send in your contributions, gentlemen, and we will pay for them if they are worth anything.

FOREIGN CORRESPONDENCE.

DENTAL EDUCATION IN GREAT BRITAIN.

To the Editor of the Dental Review:

DEAR SIR—Knowing your pages are ever open for the recording of anything of interest to the dental profession, I avail myself of that fact, and present for the consideration of your numerous readers some innovations that have lately transpired here, in the way of professional educational advancement, viz: the institution of a post-graduate course at both of the dental hospitals, the principal seats of dental education in this country. It is a healthy sign when we see old conservative institutions taking advanced positions, whether it be from compulsion or choice, and I must congratulate the advance corps of the profession here, who have by their persistent endeavors brought about a state of affairs which a few years ago would have been considered quite unnecessary, implying as it might a lack of practical perfection; impolitic, because it would only be showing the true necessity of relegating to obscurity old methods and the adoption of new ones, thereby—in the way of experience—placing the older members on the same footing as the more recent aspirants to dental honors and preferment; and unconstitutional, from the fact of it being unprecedented, which is enough in itself to condemn any new measure here. So I repeat, and emphasize, that all the more credit is due to the institution that took the initiatory step in this commendable movement. I will not attempt to speak of the project in its embryonic stage, suffice to say the want has evidently long been felt, and it is a very gratifying point to consider that with the infusion of younger blood, ideas, whose only sphere was to be labeled and shelved as relics, have been replaced with more modern ones, and instead of English dentistry and superannuated ideas, being synonymous terms, evidence of life and advancement are visible, the effect of which will be a stimulus that will awaken into activity those who had been forced into a passive position by the incubus of indifference of those who were uncharitable enough to live, and too dense to observe that with them progress was an unknown quantity.

In looking over the courses of study, or rather lectures and

demonstrations to be attended, I cannot help but notice the difference as compared with those presented by the few American institutions who proffer such advantages to the older members of the profession.

Members of any profession here place special stress upon their scientific and technical capacity, especially is this the case with medical and dental practitioners,—I believe the same holds good with the medical profession in Germany, where a doctor diagnoses a case, and confirms it by a post-mortem. American dentists are credited with good manipulative capacity, but with a dearth of scientific knowledge, a statement that is hardly borne out in so far as the latter proposition is concerned, any skeptic only has to turn to his dental literature to find some gems that have emanated from the minds and pens of our trans-atlantic brethren that will forever shine in the dental firmament. Here the instruction consists of essentially practical work and methods, and should the scheme enjoy the support it merits, its impress will soon become manifest in the requirements of the public for a better and more permanent class of operations than they have heretofore received. This will redound to the benefit of the profession in general, and to the studious and careful workers in particular, weeding out as it must necessarily do, the slop-shop dentists and bogus advertising affairs, superintended by Jews who consider gain as the prime object, and their victims as legitimate prey; these connoisseurs of clothing of very marked antiquity are one of the curses of the profession here, but every move in the way of advancement by the profession is a means to an end, which some day will cause these descendants of Adam much serious inconvenience.

It is quite possible that those at the head of advanced study both here and in America fully understand the requirements of the respective cases; while in the United States the courses consist of advanced scientific study and research, I think the plan adopted here an admirable one, introducing as it does, knowledge of a practical nature that too long has been tabooed, and voted as being only worthy of an enthusiast, or hobby-rider; but scientific treatment of dental troubles applied to everyday practice will tell its tale in the expressions of thankful patients. The various methods of permanent fillings, *i. e.* gold, and gold

and tin combined, as compared with cements; the use of the various mallets to assist in contour work, as compared with the hideous deformities produced by file and stone to permit of soft gold being used in a compound cavity. Crown work will also be a step in advance, for it will necessitate root treatment and filling instead of the excision of the faulty tooth, and the insertion of a plate over its tenantless and putrefactive root. The study of artistic prosthetic work will make the dentist an artist as well as a mechanic, and the general tendency will be to expand the intellect and broaden the capacity of those who too long have found a retreat within an atmosphere of their own self-sufficiency.

Before closing I can not help noticing a peculiar state of affairs suggested by the subscription of the proposed course of the youngest and most progressive of the institutions, viz., "The lectures will be open, subject to the approval of the medical committee, etc." Why English dentists do not possess more capacity for executing the legislative requirements of their profession than the medical council, to which they have always had to play second fiddle, is something I can not understand, for if the medical profession here do not possess a more profound knowledge of dentistry than they do in the United States,—and my experience is they are about on a par—I think the time has come for dentists to look after the affairs of their own profession, a task they are quite competent to perform, possessing at once as they do, primary, advanced and special preparation, combined with executive ability certainly not second to that of any profession.

Yours truly,

W. MITCHELL.

London, Eng.

"JOTTINGS FROM ACROSS THE WATER."

One of the latest phases of medical education is the "Post-graduate Course," and our London hospitals have just lately been vying with one another in catering for the wants of the busy practitioners who would fain become ardent students for the nonce, and gain some insight into the latest practical achievements of surgery and medicine—or, to use a somewhat comprehensive term (common, we believe, to both the sporting and

medical professions), pick up the "latest tips." In this honorable rivalry it is pleasing to note that our specialty has not been forgotten, for a very successful post-graduate course has just been concluded at the Dental Hospital of London. The "session" extended over a fortnight, and there were representatives present from various parts of the country, including Ireland and Wales. On each day special prominence was given to gold filling, and various members of the hospital staff demonstrated a host of methods, one or other of which must surely have satisfied the peculiar taste of each member of the class. Both hand pressure and malleting were resorted to; the latter method being demonstrated by electric, pneumatic engine, and automatic mallets. Cohesive work was perhaps the most prominent, but soft gold—alone and in combination with tin—had its adherents, whilst the "Herbst" method was not forgotten. The other subjects included the treatment of pulpless teeth, the crowning of teeth, the application of obturators, the properties of amalgams, and various items of practical interest to the dentist. A similar course is announced to take place at the National Dental Hospital, which it is to be hoped, will meet with the success it deserves.

A fairly intelligent man cannot fail to pick up stray crumbs of knowledge even from watching an *average* operator; whilst the benefit to be derived from the study of the manipulations of an *expert* are incalculable. Little points of weakness, dexterity, time-saving and pain-saving expedients are minutiae which, apart from the practical principles of any particular operation, should be observed and mentally digested. This method of self-education is, of course, principally associated with clinical work; but the intercommunication of thought on professional matters is apt to be forgotten or neglected in its literary aspect, much to the detriment of ourselves and our patients. The dental world would surely be the gainer, did we but exert ourselves in following the example of our medical brethren, by adopting a fuller and franker interchange of opinion on the principles and details of our daily practice.

Apropos of the subject just touched upon, we in England rejoice to find that there is a strong tendency amongst our American

brethren to condemn the system of patenting professional methods and appliances. The system is illiberal, selfish, and grossly unprofessional; and we look forward in the near future to the stamping out of what has hitherto blotted the escutcheon of dentistry. Let every American society imitate the Odontological Society of Great Britain, by refusing to receive into membership any one who chooses to protect for his own selfish gain what he should only be too proud to bequeath to his brethren for the benefit of suffering humanity.

Your editor, Dr. Harlan, lately read a paper before the Odontological Society on the "treatment of pulpless teeth," and was warmly welcomed by a crowded meeting. The best proof that the paper was not uninteresting was the fact that it was followed by a brisk discussion, and the methods advocated were treated to some very *free* criticism. Hard hitting is often associated with the best of feeling.

As a matter of pure antithesis it is interesting to note that at the last meeting of the same society a paper was read by Dr. Cunningham, of Cambridge, on "immediate root filling," in which the reader advocated a quick and ready method of disposing of pulpless teeth *irrespective* of pathological conditions. The statistics given were carefully tabulated, and showed an encouraging amount of success. The palmy days when the dentist need not *break his back* in tackling dead teeth are surely at hand! Any apostle of ease will be gladly welcomed; but his *credentials* must be good; above all his passport must be signed by a certain high functionary whom we call *Pathology*.

Not one of the many advocates of immediate root filling has yet described the *tissue changes* involved in the method which they recommend. If the treatment be sound, it should be capable of being defended on the lines of scientific demonstration. We are confronted, in connection with several dental subjects, by pure theory on the one hand, and mere rule of thumb on the other. The first is shadowy, vague, valueless. The second is grossly substantial, tough, indigestible. Fortun-

ately there is no reason why one should be alienated from the other; indeed, the happy combination of the two qualities forms the very essence of scientific truth.

London, England.

Fraternally,
NEMO.

DENTAL COLLEGE COMMENCEMENTS.

UNIVERSITY OF PENNSYLVANIA—DEPARTMENT OF DENTISTRY.

At the Commencement, held Tuesday, May 1, 1888, at the American Academy of Music, Philadelphia, Pa., the Degree of Doctor of Dental Surgery was conferred by William Pepper, M.D., LL.D., Provost, upon the following gentlemen, after which an address was delivered by John Ashhurst, Jr., M.D., Professor of Clinical Surgery:

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|---|--|
| Aguilar, Arturo, Leon, Nicaragua. | Howard, Charles P., Champaign, Ill. |
| Ascher, Hugo, Konigsberg, Germany. | Jones, J. Benjamin, Summit Hill, Pa. |
| Ayres, Percy C., Philadelphia, Pa. | Keyes, William B., Rio de Janeiro, Brazil. |
| Baker, Boyd H., Hughesville, Pa. | Knod, Hans Ludwig, Essen, Germany. |
| Baumgardner, Ira G., Philadelphia, Pa. | Kuni, Harry W., Philadelphia, Pa. |
| Beck, Harry M., Wilkes Barre, Pa. | Le Fevre, Harry W., Hillsboro, Ohio. |
| Belt, J. Ferris, Willington, Delaware. | Link, Edward G., Rochester, N. Y. |
| Bower, Elmer E., Baumstown, Pa. | Lohmann, August, Kassel, Germany. |
| Bowers, George A., Nashua, N. H. | McCanna, Horace, Atglen, Pa. |
| Brown, Frederick W., New Haven, Ct. | McDaniel, W. Archie, Birmingham, Ala. |
| Bryant, William E., St. Paul, Minn. | Manship, John F., Milton, Del. |
| Burke, John J., Wilmot, Pa. | Mayer, William J., New Haven, Ct. |
| Cabedo, Gabriel C., Gibraltar, Spain. | Meisburger, Louis C. J., Buffalo, N. Y. |
| Channell, William C., Montezuma, Ia. | Paiste, James L., West Chester, Pa. |
| Cogswell, Arthur W., Halifax, Nova Scotia. | Place, Eugene H., Freeport, Ill. |
| Cornelius, George T., Philadelphia, Pa. | Ramsden, Harry M., Frankford, Pa. |
| Dunwoody, J. Edward, Philadelphia, Pa. | Rathbun, Chauncey M., Dunkirk, N. Y. |
| Fenn, Henry H., Bridgeport, Ct. | Robinson, Will B., Greenfield, Ohio. |
| Fletcher, Charles R., Halifax, Nova Scotia. | Rue, Samuel F., Hightstown, N. J. |
| Fuller, Thomas B., Binghamton, N. Y. | Schwarze, Paul, Leipzig, Germany. |
| Gardner, Peter W., Milwaukee, Wis. | Segar, Albertus V., Westerly, R. I. |
| Gibbons, R. Hornsby, Brighton, Eng. | Smith, Charles E., Nashua, N. H. |
| Graff, Mark W., Richmond, Ind. | Sullivan, George A., Lancaster, Pa. |
| Hart, Frank J., Girard, Pa. | Tees, Louis F., Philadelphia, Pa. |
| Heyde, Hans von der, Constantinople, Turkey. | Tenny, Robert C., Eaton, N. Y. |
| Hopkins, Richard S., Cheyenne, Wyoming Territory. | Thompson, Lamar I., Rochester, N. Y. |
| | Van Deursen, George L., Paris, Ill. |
| | Weaver, Luther M., Hanover, Pa. |
| | Weinberg, Nathan, St. John, Kan. |
| | Wheeler, Walter F., Spencer, Mass. |

? ? ?

To the Editor of the DENTAL REVIEW :

DEAR SIR: Will you please state in June number what States and Territories have laws regulating the practice of Dentistry ? F.

[New Hampshire, Vermont, Connecticut, Massachusetts, New York, New Jersey, Delaware, Maryland, Pennsylvania, West Virginia, North Carolina, South Carolina, Florida, Alabama, Georgia, Mississippi, Louisiana, Kentucky, Indiana, Michigan, Illinois, Iowa, Wisconsin, Minnesota, Nebraska, Colorado, Missouri, Arkansas, California, Oregon, Dakota Territory, Washington Territory.—EDITOR.]

MEMORANDA.

Dr. G. V. Black has abandoned his trip to Europe for 1888.

Dr. C. C. Carroll, of Meadville, Pa., was at the Illinois meeting.

Dr. D. B. Freeman has forsaken the West Side of Chicago, and located at 4000 Drexel Boulevard.

Mrs. M. W. J. reported the Illinois meeting for several journals that were unrepresented by special reporters.

Cash paid for *old* dental books. Address J. W. Wassall, 208 Dearborn avenue giving title and date of publication.

The Odontological Society of New Orleans celebrated their anniversary on the evening of the second Tuesday in June.

Dr. B. A. R. Ottolengui read a paper on "Sensitive Dentine and its Treatment," at the May meeting of the Central Dental Association of New Jersey.

Dr. W. H. Taggart is concentrating his inventive mind upon the production of what promises to be the ideal instrument for shaping roots which are to be crowned.

One of the gentlemen at the Illinois meeting said in speaking of artificial teeth there were three rules to be observed : "Get the case if you can, make a fit if you can, get your pay if you can."

St. Louis was represented at the Illinois meeting in the persons of Drs. W. H. Eames, G. A. Bowman, A. H. Fuller, W. N. Morrison, G. A. Bronson, H. H. Keith, J. W. Wick and J. G. Harper.

Dr. F. H. Rehwinkel, of Chillicothe, Ohio, is the new chairman, and Dr. E. S. Talbot, of Chicago, the secretary, of the section on Dental and Oral Surgery of the American Medical Association.

Dr. W. Mitchell's right and left chisels for trimming the sides and bottom of proximal cavities in bicusps and molars are very useful. Mr. H. D. Justi has copied them and also his curved pluggers.

The Wisconsin State Dental society will meet in Milwaukee July 17 to 20, 1888.

Dr. R. N. Laurence is the newly elected president of the Illinois State Board of Dental Examiners.

The National association of Dental Examiners will meet in Louisville Monday evening, August 27th, 1888.

The Indiana State Dental Association will hold its 30th annual meeting at Terre Haute Tuesday, June 26, 1888.

The Independent Practitioner will shortly change hands, and in all probability will be removed to New York city or Philadelphia.

A committee of ten was appointed by the Illinois State Dental society to raise money for contesting the crown and bridge patents.

Dr. C. C. Carroll, of Meadville, Pa., delivered a lecture on, and gave a demonstration of, casting aluminum dentures, before the Illinois State Dental society at Cairo.

President and Mrs. Meriam were at home to the members of the Massachusetts Dental society, and the Harvard Odontological society, with ladies, on Thursday evening, June 7th, from 6 to 9 o'clock, Salem.

The sum of \$250.00 was appropriated by the Illinois State Dental society at its recent meeting for the use of the State Board of Dental Examiners in upholding the law and promoting the welfare of the profession.

The Minnesota State Dental Association meets at St. Paul, Wednesday, July 11th. The executive committee promises a very interesting programme both in papers and clinics, and hope to see many visitors from other states.

A lady very recently complained of a metallic taste in her mouth after the use of tin in the bottom of a cavity in a lower bicuspid tooth; the tin was covered with gold. Has any one else ever heard of such a complaint under similar circumstances? There were no amalgam fillings in her mouth.

The dental department of the Minnesota Hospital Medical College is no more. An effort is being made to establish a dental department of the University of Minnesota. If the gentlemen interested can induce the authorities to make the necessary appropriation, the department will be an established fact.

The committee on securing the appointment of an interne in the Cook County Infirmary, at Jefferson, Ill. (a suburb of Chicago), are at work with the county commissioners, endeavoring to convince them of the necessity for such a step in the interest of the care of the teeth of the insane in that institution.

The following named gentlemen have contributed to the litigation fund of the Chicago Dental Society since our report in the October No. of the DENTAL REVIEW: C. Stoddard Smith, C. F. Bryant, J. C. Bohan, H. Wetterer, H. L. Barnum, E. Noyes, E. Kargau, J. Austin Dunn and C. F. Matteson.

The following officers were elected at the annual meeting of the Dental Society of the State of New York, at Albany May 10. President, J. E. Line, Rochester; Vice President, C. F. Rich, Saratoga; Secretary, M. D. Jewell, Richfield Springs; Treasurer, H. G. Mirick, Brooklyn; Corresponding Secretary, G. L. Curtis, Syracuse.

The Central Dental Association of Northern New Jersey is in a flourishing condition. Ten papers were read last year by members and visitors. Dr. S. C. G. Watkins is once more chairman of the executive committee, which means a step forward for the association the coming year.

Officers of the Texas State Dental Association : President, W. J. Burton, Paris; 1st Vice-President, J. H. Lasater, Belton ; 2d Vice-President, W. H. Cook, Bonham ; Recording, Corresponding Secretary and Treasurer, G. M. Patten, Huntsville. Next place of meeting, Belton, first Tuesday in May, 1889.

A soft gutta-percha stopping for retaining temporary dressings in teeth is prepared by Dr. H. H. Townsend in the following manner : Baseplate gutta-percha is softened by dry heat on a china plate. Dry plaster-of-paris is then incorporated with it until it has reached the proper consistency. Roll out and cut into sticks or pellets.

Dr. Thos. L. Gilmer contemplates adding to and revising his pamphlet on "Fractures of the Jaws," in the near future, and publishing it in book form. Such a work is needed, and members of the profession who have any matter that would be of value to him should hasten to place it at his disposal, in order that it may appear in a permanent form.

At the April meeting of the Chicago Dental Society, a committee consisting of Drs. J. N. Crouse, E. Noyes and Geo. H. Cushing was appointed to make the necessary arrangements for the celebration of the twenty-fifth anniversary of the founding of the society in February, 1889. The committee will report the full programme at the October meeting.

The management of the Chesapeake & Ohio Railroad have offered to carry dentists and their families to the Louisville meeting from Washington, Richmond, Charlottesville, Staunton, and all points on their line, for one fare for the round trip. Tickets will be on sale August 24, 25 and 26, going, and they will be good to return until September 10, 1888.

THE Illinois State Dental Society will shortly republish a pamphlet, issued in 1877, entitled "Our Teeth," for popular distribution. It will also be sold to dentists for circulation among their patients, at the cost of publication and handling. Sound dental literature, freed from any advertising, is what is needed to awaken the people to a necessity for care of their teeth.

B. J. Bing, D. D. S., of Paris, France, has devised several pairs of forceps for trimming the ends of roots, so that they may be given any shape desired without lacerating the gums. They will soon be placed on the market by Leu & Co., of Paris. We have seen them in actual use, and they are certainly very effective for this purpose. They will not be very expensive—say about \$15 for the set of six.

HOW TEETH DECAY.—Russian observations have shown that teeth decay in a quite regular order, the lower third molar being the first attacked, then the upper, then the lower fourth molar, and so on, the lower incisors and canine teeth being the last affected. Upper teeth, as a rule, are more durable than lower, right than left, those of dark persons rather than those of blondes, those of short than those of tall.

Dr. J. Hooper has placed in our hands a magnificently illustrated book on the growth and prosperity of Louisville, issued under the direction of the Louisville

Board of Trade. As many dentists will visit Louisville in August next, they may wish to know something about the city, which will be found in the volume under consideration. A card addressed to the Secretary of the Board of Trade will bring it to you, if you so desire it.

A correspondent has called our attention to a line in the *Items of Interest* for April, where the editor of the DENTAL REVIEW is quoted as saying that tin and gold may be inserted in a tooth "under moisture." It may be; but that is not the way in which the writer *does* insert it. He believes that a dry cavity is always best, and so practices in filling teeth if he wishes to save the tooth. The same correspondent calls attention to "seminal deposits." The writer said serumal deposits.

The following gentlemen were placed on the list of corresponding members of the Illinois State Dental Society by a unanimous vote at the late meeting held in Cairo, Illinois, Chas. S. Tomes, F. R. S., London, England; Joseph Walker, M. D. L. D. S., London; Geo. Cunningham, D. M. D., L. D. S., Cambridge, England; E. Magitot, M. D., Paris, France; M. M. Levett, D. D. S., Paris, France; John E. Grevers, D. D. S., Amsterdam, Holland; A. H. Sylvester, D. D. S., Berlin, Germany; J. G. Van Marter, D. D. S., Rome, Italy.

A recent visit to Dr. Newkirk's office showed us a very neat and cheap apparatus for heating water and maintaining it at a temperature suitable for use at all times. Purchase a Eureka gas burner and attach it to the gas bracket; take an ordinary wall lamp bracket, such as is used to support an oil lamp, and in it place a flaring marbled tin cup, so that the bottom of the cup will almost touch the top of the burner. Sufficient heat is obtained from the lighting a jet of the burner to keep the temperature of the water about as desired, and at a very small expense.

The Dental Department of the Minnesota Hospital College, and the Dental Department of the St. Paul Medical College, have been succeeded by the Dental Department of the College of Medicine and Surgery of the University of Minnesota.

Up to date the following gentlemen have been appointed to professorships: Drs. C. M. Bailey, T. E. Weeks, E. H. Angle and J. H. Martindale.

Other appointments of special lecturers, clinical instructors and demonstrators will be made at an early meeting of the Board of Regents.

EXTRACT FROM PRIVATE LETTER.—"It would probably be of interest to you to know that the Holland Odontological Society held its sixth annual meeting last April. The Board consists for the following year of Drs. Th. Dentz, president; Geo. W. Dentz, vice-president and treasurer, and John E. Grevers, secretary.

The society numbers at present fourteen members. Dr. Grevers held a causerie on his trip through the U. S., and demonstrated a great many new instruments; also spoke on the Shumway method and crown and bridge work. At the clinics, held in the morning, he demonstrated a gold and tin filling, using Bing's six stoppers."

The Dental section in the American Medical association, according to a private letter, had an average attendance of fifteen. The same correspondent says that twenty-two was the largest number present at any of the sessions. Another correspondent states that twenty-eight were present at one time, and the *Archives* says

thirty-two. Delegates were accepted from Dental societies without inquiring as to the society they came from. We agree with the *Archives* that no D.D.S. should be allowed to become a member unless he is also a member in good standing of a local medical society.

WARNING.

Dr. C. P. Pruyn has received from Dr. Thompson of Fredericksburg, Va., a letter stating that a person calling himself J. Steinam is traveling through Virginia, and proposes to go through the South selling *office rights* to use a local anæsthetic which is apparently only cocaine in a solution of carbolic acid. The price charged is \$50.00, and the exclusive right to use it in one locality is \$75.00. Dentists will do well, before purchasing the right to use any secret formula, to remember that secret remedies and preparations savor of quackery, and that it is unprofessional to use them. We are opposed to all secret formulæ and preparations, and will not indorse them under any circumstances. If a patient should die from the effects of a secret anæsthetic the dentist might be held for manslaughter or even murder.

Dr. W. St. Geo. Elliott will attend the joint meeting of the American and Southern Dental Association, and read a paper on Amalgams, and exhibit the following new inventions:

Hand Piece.

Hand Piece and detachable cable.

Right Angle Instrument.

Mechanical Mallet (straight).

Mechanical Mallet (right angle).

Syringes (2) Nerve Canal Drills.

Thin Engine Saws, and New Amalgams.

DR. GARNETT'S ADDRESS.

What did you think of Dr. Garnett's address? Does he intend to include dentistry in his sweeping expressions in the second clause of his proposition: "ANY BRANCH OF THE HEALING ART." "THE ART AND SCIENCE OF MEDICINE AND SURGERY?" I fear the effect of the too much patronizing, and it looks to me as if these M. D.'s were at something. For one I am ready to meet the attack, and will be in the field, and as hard at work as any of them, when the proposition for their Board of Examiners to run Dentistry reaches the legislation halls of Tennessee.

I am sure there is no hope for the immediate adoption of his proposition to increase the number of terms. He evinces little knowledge of schools, or he would know that it is an easy matter to have a large number of matriculants, as I have seen in some schools near to me.

M.

THE PASSAGE OF A HAIR INTO STENOS DUCT, CAUSING AN EXTERNAL ABSCESS AND FISTULA.

Dr. S. W. Overall, of Memphis, reports in the *Medical Record*, May 12, the accidental forcing of a hair into stenosis duct, which was broken off in an attempt to remove it. At the expiration of two weeks a tumor appeared on the right side of the face, which finally was opened externally and the pus escaped, much to the annoyance of the subject. The saliva also flowed through the opening, but the hair did not come away. For six weeks this continued, when cocaine

was injected and a search was made for the hair, which was finally discovered at the end of the seventh day after the operation. After the removal of the hair (one inch long) the wound healed, leaving a considerable scar. During the time the doctor was suffering from the abscess and the flowing saliva, he studied the effects of stimulants on the salivary secretion, with the following results:

Movements of the lower maxillary had no appreciable effect on the gland. Acids, introduced into the mouth, without movements of the jaw, would invariably cause a free flow of saliva; mastication, with acid ingestion, would cause the greatest flow. I do not believe the movements of the jaw alone had any effect in exciting the flow of saliva but the process of mastication diffused the acid in the mouth over a greater surface. Citric and acetic acids were most active. Food free from acids would produce very slight flow.

EDUCATION!

We are in receipt of the following letter from a student in one of the colleges belonging to the National Association of Dental Faculties which we print without comment. It is as follows:

DR HARLAND

— — — — Apr ^o/₅ 88

Dear Sir as I am a Student from the — — — — Dental College I take the liberty to Write a few words to you in regard of Dental matters I expect to graduate next — — — — & would like to get a position as a assistant with some 1st class Dentist, hoping you can assist me in regarding this, my home is in — — — — & therefore I would like to get a possition in chicago I have some freinds their & it would nut be very far from my home. I am well aquainted with — — — — I also formed the equaintance of your Prof in — — — —.

I hope you will not refuse my favor for this must be my bread & butter their are so many great (!!!) Dentist in chicago that I know nothing about that if they knew how reliable I was, would be glad to take me as asistant please reply as soon as you can & Oblige

FRAGRANT AND ANTISEPTIC MOUTH WASH.—We have published various formulas for preparing mouth washes, the most pleasant and refreshing one being that which will be found on page 199 of our last volume. Since this was published we have received a suggestion from a competent authority to omit the sugar, as this is liable to interfere with the antiseptic character of the liquid. We think this suggestion a good one, and now propose the following amended formula, which has been practically tested. The essential oils used in its preparation should be of the very best and purest quality:

Safrol	360 min.
Oil of Pinus Pamilia	120 “
“ “ Curaçcoa	120 “
“ “ Vetivert	6 drops.
“ “ Wintergreen	24 “
“ “ Anise, Saxony	6 “
“ “ Rose, Geranium, Afr.	6 “
Naphthol	60 grains.
Deodorized Alcohol	24 fld. oz.
Solution of Saccharine	½ “ “
Glycerine	8 “ “
Purified Talcum	2 troy “

Water enough to make six pints. Dissolve the essential oils and the naphthol in the absolute alcohol, add the glycerine, the purified talcum, and afterwards three and one-half pints of water, previously heated to a temperature of 122 F. Stop the vessel securely, and shake the contents frequently until they are quite cold. Then filter through a netted filter, retaining the first portions of the filtrate until it runs through clear, and pass enough of water through the filter to make the product measure 16 fluid ounces. The "Solution of Saccharine" directed in the above formula is one containing four grains of Saccharine in the fluid drachm, which is the strength recommended by the National Formulary Committee. It is prepared as follows :

Dissolve 512 grains of saccharine and 240 grains of bicarbonate of sodium in 10 fluid ounces of water (taking care that the reaction is made to take place in a sufficiently large vessel to prevent loss from the resulting effervescence); then filter the solution; add to it four fluid ounces of alcohol, and pass enough water through the filter to make 16 fluid ounces.

The cost of this preparation, calculated upon the basis of fair market prices, is about 18 cents per pint.—*American Druggist*.

The meeting of the Kansas State Dental Association was held at Topeka, Kan., April 24th to 27th, 1888. The following officers were elected for the ensuing year: President, W. M. Shirley, Hiawatha; Vice President, H. W. Parsons, Wamego; Secretary, C. B. Gunn, Leavenworth; Treasurer, F. O. Hetrick, Ottawa. A number of interesting papers were read, and among the many interesting clinics we noticed the method of Dr. L. M. Mathews, of Lawrence, demonstrating the mending of five rubber plates at one time, in a pint tin cup. A small amount of rubber was removed where blocks were to be inserted, or the plate mended. The surface was saturated with rubber dissolved in chloroform. In place of wax, rubber was used, the plates inverted in a tin cup with plaster, after which they were vulcanized and finished. Dr. R. Matthews, Wichita, used Williams' Gold cylinders first soft, and the latter third of the cavity with No. 1 cylinders torn in two once or twice and annealed to red heat in alcohol flame.

Dr. J. G. Hollingsworth, of Missouri, capped a nearly exposed pulp with chloro-percha, over which was placed Parson's Oxy-Phosphate of Zinc and allowed to harden, after which the frail tooth was prepared for a gold crown, a band of gold was then fitted, cap swaged and soldered to the band; the crown was set with the same Oxy-Phosphate. Dr. E. S. Talbot filled pulpless roots and a cavity with Parson's Oxy-Phosphate.

Dr. W. H. Shulze removed a polypus and the remnant of the pulp, the root was filled with gutta-percha points, it being a mere shell, and decayed almost to the periostum at several places. To check considerable bleeding a sandarac plug was inserted into the root and allowed to remain over night. The following morning the root was lined with cement to get body, and when hard a Logan crown was fastened to it with cement. Parson's Warm Air Injector was used to dry the root.

Dr. F. O. Hetrick filled a cavity with Parson's Eureka Silver Alloy. The tooth was filled last year with cement. Decay was found at the cervical margin, and in removing sufficient was permitted to remain to protect the pulp.

Parson's Saliva Ejector and Warm Air Injector were on exhibition, and used for clinical work during the meeting.

DR. ARPAD G. GERSTER, in his work on Aseptic and Antiseptic Surgery states "That suppuration is always undesirable and dangerous, and, if possible,

should be avoided by all means. Its essence is textural destruction and death, and systemic intoxication. The phrase "healing by suppuration" is an absurdity, is misleading to the student, and should be banished from text-books. As a matter of fact, healing never takes place while active suppuration lasts; it occurs only after the limitation and termination of suppuration, not *by it, but in spite of it*.

The expression "laudable pus" as applied to the contents of an abscess during one of its stages of spontaneous limitation or maturing, is also misleading. *Pus is never laudable*; it always is a menace to the health and integrity of the animal organism. Suppuration is a treacherous ally, and its aid should never be invoked by the modern surgeon, or at least should be shunned as long as other ways of curing an ailment remain untried."

"The selection of different lotions should be governed by the following experiences: *Carbolic lotions are dangerous to small children*, even in great dilution and should never be used on them. Corrosive sublimate is also poisonous, causing salivation, and occasionally fatal diphtheritic inflammation of the ileum and the thick gut, if its use is immoderate. Wherever superficial ulcers or inflammations of the cutis require the antiphlogistic action of the very diffusible carbolic lotion, it should be employed in the strength of two or three per cent. The continued use of higher concentrations will corrode the tissues, and is otherwise dangerous.

Where a direct application of the lotion to the wounded or diseased surface is desirable, as, for instance, in all bloody operations, mercuric bichloride deserves the preference over carbolic acid. Even weak solutions (as 1: 5,000) have a decided germicidal power, and can be used on very extensive wounds for hours without serious danger of intoxication. The final irrigation of an operation wound should always be done with a stronger (1: 1,000) solution. Abscess cavities will always require the stronger solutions.

The greatest advantage of corrosive sublimate over carbolic acid is, however, to be sought in its different effect upon the fresh blood-clot and the tissues exposed to its action in a fresh wound. It will be seen that irrigating an amputation wound, for instance, with carbolic lotion, will each time provoke very profuse oozing.

Vessels that had stopped bleeding by the formation of a clot within their cut orifices begin to bleed anew after carbolic irrigation. This is caused by the peculiar macerating effect of carbolic acid upon the fresh blood-clot. Its color turns from dark red to a light brick-red, its toughness and cohesion are lost, and the slightest touch of a sponge will suffice to detach it from the orifice of cut vessels, thus renewing the hæmorrhage. Another disagreeable effect of carbolic lotions upon wounds is the profuse discharge of bloody serum, continuing for one or two days after the operation, rendering one or more changes of dressings necessary within a day or two, and thus depriving the wound of needed rest at the most critical period of repair.

Corrosive sublimate does not dissolve clots, hence oozing stops by natural means during its use. It does not irritate the vasomotor nerves as carbolic acid seems to do, hence the oozing subsequent upon an operation done with its aid is very scanty. Drainage is easier, can often be altogether spared; no early change of dressings is required, and cure under one dressing is possible, and in fact, is the rule after its proper use."—*Gerster*.

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ORIGINAL COMMUNICATIONS.

OUTLINES OF A COURSE OF STUDY IN OPERATIVE DENTAL TECHNICS.*

BY G. V. BLACK, M. D., D. D. S., CHICAGO, ILL.

Under the term technics, if used in the broadest sense, would be included all of the handicraft by which things are fashioned, and therefore all pertaining to the use of instruments in operative dentistry. But it is now proposed to found a department of study preparatory to this, which shall include all dental operations, as nearly as may be, which shall be done out of the mouth. This is for the purpose of training the hand and eye for performing operations within the mouth. It is to this that I now wish to limit the term Operative Technics.

It is to be understood in the beginning that this department of study is not to limit or in anywise to take the place of either the practical operations in the infirmary, or the teaching now being done in the college lecture-room, but that it is to be additional thereto.

In this department it is proposed that students shall be taught the nature and physical qualities of the teeth upon which they are to operate, of the materials they are to use, and of the instruments by means of which they are to use them. This I would do in a series of object lessons, by having students handle teeth and study their forms and examine enamel and dentine by cutting them with instruments; manipulate the material used for fillings,

* Read before the Odontological Society of Chicago, June 21, 1888.

study and practice the use of instruments, and learn the tests for perfect manipulation.

ANATOMY OF THE TEETH.

The first step in the study is the anatomy of the teeth, and the consistence or physical qualities of enamel and dentine. This I would do by having students handle and examine minutely the forms of the several human teeth, by having them cut them with the instruments they are to use in practice, and by examining their minute structure with the microscope. The general study of the histology of the teeth may be had in the histological laboratory as heretofore; but the study of the minute forms of the enamel with reference to its cleavage, and the bearing of this on the forms that should be given to the margins of cavities for filling, should belong especially to this course of study.

In the study of the forms of the teeth the instruction in this department should follow the didactic teaching of the anatomy of these organs by giving the students teeth from various positions in the mouth, and require them to determine by their form from what part of the mouth they came, whether permanent or temporary, etc., and give the peculiarities of form by which this is determined for each tooth. The cusps and sulci of the teeth should be named and described. Each tooth should also be described as to the peculiarities of the shape of its several surfaces and form of its root or roots. Furthermore, each should be properly classified, as, long cusped, short cusped, bell crowned; or the reverse, as, thick necked, laterally compressed, well formed, indifferently formed, malformed, long rooted, short rooted, abraded, faceted by opposing teeth, etc. Indeed, every characteristic pertaining to the class of teeth to which it may belong, be it molar, bicuspid or what not, and the characteristics of the individual tooth, should be brought out. This will require much of invention on the part of the instructor, for the reason that we have no adequate description of the human teeth in our literature, and the rules of description and study must be made new. But it is only in this way that we may impart a knowledge of the forms of the teeth to students. This whole matter needs to be reduced to rule. This exercise might not require the whole of very many of the first lessons, perhaps; but it should be continued throughout the whole course, by requiring that every tooth that comes before

the class for any purpose be accurately described before anything else is done with it.

THE PULP CHAMBER.

The next step should be the study of the forms of the pulp chamber and root canals. This must, of course, be done by cutting the teeth in such a way as to expose these cavities to view. Some of the first lessons may be taken by simply breaking the teeth open, until students have learned something of the part of the tooth in which these cavities are located; but very soon the cutting should be done by fairly well fixed rules, and the idea should be made prominent that this is for the purpose of enabling the student to gain such a knowledge of the subject that he may cut into the crown of a tooth under any condition of partial obscurity in the mouth and, strike accurately such part of the pulp chamber as he may desire, and understand the relations of that cavity to the cut he has made.

Incisors and cuspids, upper and lower, should be cut in three directions, as follows:

1. Lengthwise—labio-palatal or lingual.
2. Lengthwise—mesio-distal.
3. Crosswise in nearly all parts of the length of crown and root.

These should be ground perfectly flat on special emery wheels provided for the purpose, and, when ground, the student should be required to make silhouette prints from them and present a copy to his instructor as a record of his work. This printing should include the various cuts from each tooth of the entire human denture (of one side), and, if possible, all of these should be made by each student.

The bicuspid and molars should first be ground across, beginning on the cusps or grinding surfaces and continuing until the horns of the pulp are discovered. Here the difference in the location of these with reference to the grinding surface will at once become apparent to the student in the long and short cusped teeth, bell-crowned and thick-necked teeth, etc., and he will be made acquainted with the importance of distinguishing these factors by the outward shapes of the crowns of teeth; a good practice will be to saw the tooth through the crown. A print should be made when the horns of the pulp are first seen, and then the grinding

should be continued until the bifurcation of the roots—in the doubled and tripled rooted teeth—prevent further progress, meantime making frequent prints. This will include the whole form of the pulp chamber and the branching of the canals. The tooth may now be turned and the grinding begin at the points of the roots, thus completing the work. In many cases it will be well to proceed from the apices of the roots at first and do all of the grinding from this direction.

During the grinding, beginning at the crown, the student should, when the pulp chamber is fully opened, be required to pass broaches through all of the roots, and be questioned, as a matter of study, as to the position the handle of the broach would hold to the face if the tooth were in the mouth, and as to what part or parts of the crown would have to be removed to give proper access to the canals.

There are a great many points that should be brought up by the instructor in connection with this grinding, such as the thickness of the walls of dentine at the various points where caries occurs; the peculiar directions in which root canals diverge from the pulp chamber in teeth of different shapes, etc.

After this cross-grinding, as much lengthwise cutting should be done as practicable. Some of this should be from lingual to buccal, and some from mesial to distal. This latter is especially valuable in bicuspid and lower molars for illustrating the thickness of the walls of the dentine and the location of and danger of exposing the horns of the pulp in proximate cavities.

In this course, if students examine the work of their classmates, comparing teeth and pulp chambers one with another, each will obtain a good general knowledge of the forms of pulp chambers and root canals; indeed, such a knowledge as few dentists of to-day possess.

EXCAVATING.

Excavating carious cavities in teeth out of the mouth should be a prominent feature of the course. The obtaining of teeth for this may be a matter of much difficulty in large classes, for the reason that it should be done in teeth freshly extracted, though much of valuable illustration may be had upon dried teeth that have been soaked in water—water to which some antiseptic has been added.

Perhaps few of us would wish to use specific rules in excavating. It is likely, however, that most of us come to do so without knowing it. Some years ago when I began to study this matter with the view of formulating rules of procedure, I was surprised to find how closely I was following fairly fixed methods. But for the purpose of teaching we must adopt rules, otherwise our teaching will fail to impress the student from the want of fixedness and form. Furthermore, when I speak of rules for excavating, I do not have reference to the shaping of cavities for the retention of fillings. This the student will find in the books already. I refer to the motion and direction of the motion, of the instrument and the kind of instrument for opening cavities, removing carious dentine, and finally we may take up the forming of cavities. What parts of cavities should first be cut, and how, by what instruments, and the order of procedure that will give the best results, should be systematically taught. Since I have been watching the work of students in the infirmary, the necessity for this kind of teaching has become strikingly apparent. When a patient comes with an aching tooth, the first thing the student does usually is to thrust an excavator into the pulp. Day after day I have tried to show them how to do this excavating without wounding the pulp, but in the mouth the motion of the instrument and the direction of the cuts are difficult to see, and too often the ominous scream is heard with the very next patient. I am satisfied that a much clearer idea of this can be given upon teeth out of the mouth. It is difficult to show the cleavage of the enamel well in the mouth so that students may grasp the idea and be able to use this knowledge to advantage, in applying force in the right direction for the opening of cavities. It is still more difficult to show clearly how, by certain sweeps of properly selected excavators, the entire margins of cavities can be quickly cleared of carious dentine, leaving that part over the pulp to be carefully removed when one can see just where his instrument is going. Indeed, until one can excavate closely about an exposed pulp without touching it, in a cavity filled with blood, merely having the outward form of the tooth in his eye, he is hardly fit to practice. I do not recommend such a procedure as a routine practice, however.

THE ENAMEL PRISMS AND CLEAVAGE.

Study of the enamel prisms with the view of determining their direction on the several parts of the crowns of the teeth should be made. This, when learned, becomes an index to the cleavage of the enamel, being always in the long axis of the prisms. An intimate knowledge of this is important in the opening of cavities, as it shows at once the direction in which force should be applied in chipping away overhanging margins. Its greatest value, however, is in the shaping of margins of cavities preparatory to filling. In order that the margins of cavities may have the greatest strength, the enamel should be cut very nearly in the length of its prisms, or in the direction of cleavage, otherwise they will not well bear the condensation of gold against them, nor will they endure after the gold has been placed. Especially is this true if the inner ends of the prisms have been cut away, leaving the outer unsupported. While some vague expression of these facts exists in our literature, I know of no sufficient studies of the subject having been published.

DR. JACK, in his admirable article in the *American System of Dentistry*, disposes of this whole subject in a paragraph. In *HARRIS' Principles and Practice of Dentistry* (1885) it is not mentioned. Failure of fillings, apparently from want of appreciation of this subject, is often seen in otherwise splendid operations.

I know of no way of properly fixing this matter upon the minds of students so as to make it available for correct use in practice except by a critical and somewhat extended study of the direction of the enamel prisms, and of cleavage on the different parts of the crowns of the several teeth. This must be done by grinding sections in various directions across and lengthwise the crowns of the several teeth, developing the prisms by the use of dilute acids so that they are plainly seen with low powers of the microscope, and studying them in detail. This is readily done with powers so low that a considerable part of the circumference of a crown may be seen at one view, and the direction of its prisms noted, and drawn by students who have no extended knowledge of microscopy and the forms of margins of cavities planned. These studies should be made in sufficient number and accompanied by sufficient questioning, to enable the student to

determine the direction of the enamel prisms anywhere on the crown of any tooth by observing its form.

Another aid in this study, which is very important, will be found in illustrations of cleavage of the enamel, by careful chipping with chisels or any sharp instrument. For this exercise we need the enamel of parts of the crowns of the teeth from which the dentine has been removed. Many good specimens for this purpose will be found in extensively decayed teeth with large portions of undermined enamel; but they may also be prepared by burring out the dentine with the engine. This latter ought to be done in a sufficient number of cases to well illustrate the normal strength of the unsupported enamel, for otherwise the student is liable to suppose that the easy chipping is due to the weakening of the enamel by caries, which is only partially true. In either of these preparations a little practice enables the student to chip away the enamel, so as to illustrate its cleavage and confirm his microscopic studies, on all available portions of the crowns of the teeth.

This course of study will, if well followed, show students why the enamel at the margins of cavities should be cut in certain definite shapes in order that they may resist crumbling, in the insertion of fillings, and endure after fillings have been placed, and thus prevent, in a large degree, the errors so constantly seen in practice.

OPENING OF PULP CHAMBERS.

I should also introduce some distinct method of instruction in the opening of pulp chambers and filling root canals. One point of the first importance in this study is that the student should learn how and in what direction to pierce a sound tooth or one with a filling, so that his drill will enter a particular portion of the pulp chamber and give the most direct access to the root canals. He should be carefully taught the particular direction his drill should take in each individual tooth of the set of thirty-two. For this purpose, and for the studies which follow, there is probably no better method than to have the students take impressions of each other's teeth (wax or modeling compound will answer and be more cleanly than plaster), and then place one, two or a half dozen natural teeth in the impressions of those with which they correspond and include them in a plaster cast. If

this be done skillfully, the result will be a plaster cast with certain natural teeth in position, upon which operations of any sort may be made, and, if thought best, they may be so inclosed that the approach will be about the same as in the natural mouth. This may be done by mounting casts of the upper and lower jaw on a hinged articulator, that will open only as much as the mouth.

Upon these teeth students may practice drilling for pulp chambers, studying the direction the drill should take in the various teeth. Also the opening of pulp chambers through carious cavities in grinding and proximate (distal and mesial) surfaces. They may also practice the cleaning and filling of root canals, in which they may make use of the various methods, and determine how nearly perfect their work has been by after examination.

FILLING TEETH OUT OF THE MOUTH.

Filling teeth out of the mouth and afterward testing for leakage, should form a part of this course. This should be done with the view of teaching useful rules for the manipulation of the several materials used, and familiarizing the students with their essential qualities. In this work the manipulation of the materials used for temporary fillings should receive due attention; particularly gutta-percha and the oxyphosphate of zinc. These two, while the best in use, require special handling in order to obtain good results. Gutta-percha, especially, should be closely studied until the student becomes able to make fillings that will bear the ink test. These may be made in glass tubes. The use of a number of boxes of oxyphosphate of zinc, in teaching students the proper methods of handling it, would be a matter of economy for the colleges.

It will be especially useful to introduce a variety of amalgams, the composition of which is accurately known, and study their peculiarities as regards manipulation and their liability to shrinkage and spheroiding, as shown by the ink test. This may be varied by mixing with more or less mercury. This may also be conveniently done in glass tubes, but teeth should also be used, and in these, practice in contouring can be had, which will constitute a very useful exercise. In this work students will learn much of the conditions of success and failure, mechanically considered, of operations in the mouth, and if happily they succeed in establishing in their minds the idea that the essential points in a filling

are the perfect exclusion of moisture and a perfect border or margin, much good will have been done.

Tin may be used to demonstrate the manipulation of tin itself, and largely for that of soft gold. I am satisfied that few students of to-day are learning the value of tin as a filling material. The too nearly universal habit of using cohesive or semi-cohesive gold has banished from the dental depots all instruments suitable for the manipulation of either tin or non-cohesive gold foil, and practically neither are in use except for filling the cervical borders of large proximate cavities. We cannot use tin very successfully without resorting to the old plan of wedging, and without this, non-cohesive gold cannot be used successfully for entire fillings. I, for one, would like to see this ancient and now almost lost art revived. I believe that students would more readily learn to make fillings by that plan which would bear the ink test than with cohesive gold.

Gold filling, with both the soft and cohesive forms, should be done as far as expense will allow, followed by very careful ink tests for leakage. I should favor making these tests in teeth, rather than in glass tubes. Any considerable leak will show through the enamel within a few days if the tooth, when removed from the ink, be properly washed. Enamel will not be stained by ordinary ink. For still more delicate tests the aniline dyes, dissolved in alcohol, may be used. These will penetrate where the ordinary inks will not go.

In this work very careful instruction should be given in the essential rules for packing cohesive gold, for without this the expected instruction would be too liable to end in useless experimentation.

In connection with the filling with gold, careful studies of the physical and chemical qualities of gold foil should be made. At least, the conditions of the loss of the welding property of foil and the use of ammonia should be given sufficient experimental study to enable students to become intelligent in regard to it. Certainly the student should be sufficiently instructed so that he can readily appreciate the difference between the true cohesive condition of gold foil and the non-cohesive or semi-cohesive conditions, and be able to use each intelligently. In order that he may do this, I believe it is essential that he pick apart, or en-

deavor to pick apart, fillings that he has made in order that he may learn how much cohesion has been obtained. This point cannot be well taught in the infirmary practice.

PLAN OF CARRYING OUT THIS COURSE OF INSTRUCTION.

The room for this work should be provided with benches very similar to those usually found in the mechanical laboratories of our colleges. The pupils should be divided into classes of suitable numbers, to be managed by one instructor, enabling him to give special attention to each individual as required. Much of the time should be mixed with short demonstrative lectures, as this or that essential point may come up. For the most part, each member of the class should be doing the same thing at the same time, so that these lectures may be directed to the class rather than to the individual. In some cases it will be found good management to detail sections of the class for certain hours to do certain work, as that of grinding certain teeth, etc., rotating these sections so that in the end all perform the same duties. The class should devote about three hours every day to the work during the time they may be employed in this way. And when one class has finished, another may take its place, until all the pupils of the school are accommodated. This plan has given excellent results in the department of Prosthetic Technics in the Chicago College of Dental Surgery during the last year, and I have every reason to believe that it will do the same in operative technics.

POSITION OF THIS COURSE OF STUDY IN THE CURRICULUM.

Perhaps some importance should be attached to the time in the course of the student's college work at which this study should be introduced. There are many reasons for introducing it during the first year. It seems hardly fair treatment to infirmary patients to subject them to the awkwardness of students who have had no drill in the preparation of cavities nor in filling. But in most of our schools the junior year is overcrowded already, so much so that students have hardly sufficient time for the necessary study on the subjects already allotted to them. Again, it seems to me that this course will benefit the student most if given in conjunction with his infirmary practice, and after he has learned something of the difficulties he will have to encounter. Still there is a very serious objection to this in the fact that if it

is placed in the senior year many of the students will be unable to get into the classes until toward the latter part of the term, which would certainly not be well. It will probably be better in most schools to shift some other branches to the senior year, if necessary, to make room for the operative technics in the first.

CRYSTAL-GOLD FILLING.

BY M. SCHLENKER, ST. GALLEN, SWITZERLAND.

[Translated from the German.]

Adolf zur Nedden, a worthy member of our profession, whose life was entirely devoted to its interests, died in the prime of his manhood in 1872, very suddenly, the victim of apoplexy. We owe to his genial inventive spirit the discovery of a crystal-gold, which is, so far as I am aware, entirely unknown in America. Nedden did not make of his excellent preparation an article of commerce: it rather seemed to be his desire to interest his friends only. He himself used his preparation to commence his fillings, and finished them with cohesive gold foil, because he considered fillings made entirely of his crystal-gold unreliable. Of the gold itself we will treat hereafter.

At the time when I received the news of M. Nedden's death, I was unhappy in the thought that his discovery died with him but was greatly relieved when I ascertained that his widow had learned the process of manufacture. The gold has ever since been prepared by the widow, and is of the same quality as formerly. This special preparation of crystal-gold can be manipulated with such ease and so beautifully, that after having tried every manufacture of crystal as well as foil gold preparation, and after having carefully compared them with Nedden's crystal-gold, I felt it essential to detail my experiments in the *Deutsche Vierteljahrsschrift für Zahnheilkunde*.^{*} Shortly after the publication of this article I received a touching letter of thanks from M. Nedden's widow, who was entirely unknown to me. She emphasized especially that, whereas the profit from the sale of the crystal-gold was her only source of income for herself and

^{*} M. Schlenker, Notes on Gold Preparations—Advantages of Nedden's Crystal-gold. *D. V. f. Z.*, 1874, page 294. The name of this publication was changed in 1883 to *Deutsche Monatsschrift f. Z.*

family, she had been benefited by me. Since then I have endeavored to aid this poor family, and have published the results of my experiences and experiments, from time to time, in the publication above mentioned. Frequently the use of the gold was demonstrated within and without the mouth at the meetings of the Central Society of German Dentists. In this way many have commenced the use of this preparation, and whoever has once become acquainted with it and is accustomed to its use, can not dispense with this glorious preparation.

When Dr. W. Herbst first published the rotary method of filling (according to which method *only the gold foil* manufactured by his brother-in-law, *Mr. C. Wolrab*, Bremen, should be used), I felt dismayed at the unfavorable prospects of the support of the poor family, because if the rotary method would accomplish what Dr. Herbst claimed for it, very soon no other gold would be used than the foil recommended by him and manufactured by Wolrab. At least, so I thought.

Experimentation, however, is a favorite native intuition, and hence I decided to test the merits by experiments. Comparative trials between the usual method and the rotary method have clearly demonstrated that more gold can be condensed in a cavity by the former than the latter method.

A filling introduced by hand-pressure will weigh 0.220 gr., while one of the same size introduced by rotation weighs only 0.130 gr. The filling introduced by hand-pressure weighs nearly twice as much, which is quite a difference. A filling made by the rotary method, using Nedden's crystal-gold, weighs 0.270, and the same cavity filled with Wolrab's foil only required 0.180 of the latter gold.

One and the same cavity filled with Wolrab's foil by hand-pressure and by the rotary method is adverse to the latter. The hand-pressure filling weighs 0.250 and can not be separated, while the filling introduced by the rotary method only weighs 0.200 and may be separated into the separate layers of which it is composed.

Immediately after Herbst's demonstrations in Frankfurt, Dr. Adolf Petermann attained a higher specific weight by the plugging method than by the rotary. The plugged filling had a specific weight of 15.128, while that introduced by the rotary

method had a specific weight of only 14.575.* The specific weight of pure gold is 19.5.

Undoubtedly, Herbst discovered this fault as well as others, otherwise he would not have improved or changed his original method. At his last lecture delivered in Berlin he admitted this.† At present his rotary method has been changed to what virtually is plugging. In a pamphlet recently published, on page 17, it reads as follows: "The second layer is treated as the first. Every piece of gold should be pressed against the layers already in the cavity, with a heavy hand-instrument, while a rotary motion is exerted. When the second layer is condensed, examined with a fine instrument and possible defects corrected, the third layer is introduced." Of fissure fillings Herbst says (page 20): "Large cylinders or pellets made of gold foil are anchored in the angles of the cavity by a rotary movement of a hand-instrument. The filling is then continued in this manner, it being assured that the instrument while in a rotary motion has touched all of the entire surface of the gold. The instrument should be, if possible, of the same size as the bottom of the cavity. With number 5 of the instruments designed for the dental engine (whose shank is thinner than a hand-instrument), the first layer of gold is evenly pressed on the bottom of the cavity. It is then thoroughly examined with a sharp instrument, and defective points, if any, filled with smaller cylinders, etc., etc."

The method of using Nedden's crystal-gold is precisely the same, but any further rotation would be not only unnecessary, but even injurious, because thereby the layer of gold would not be any more thoroughly condensed, but made smooth. Cohesive gold coheres to an entirely smooth surface of Nedden's crystal-gold, but it coheres with more certainty to one which is rough.

As stated, Herbst has annually changed his rotary method, and to-day he has reached a position considerably below the one he occupied when the rotary method was first advocated, because he has virtually returned to the plugging method. The most ardent advocates of the rotary method, men who demonstrated the superior advantages of the method at dental society meetings, men who proclaimed the method as the *ne plus ultra*, have long

* Official report of anniversary session, Frankfurt Dental Society, 1882, p. 34.

† *Deutsche Monatss. f. Zahnk.*, 1886, p. 441.

since abandoned the rotary method and returned to plugging. My friend, Dr. Blumm, who was a faithful disciple of the rotary method, is said to have abandoned it. He employed almost exclusively Nedden's crystal-gold before becoming an advocate of the rotary method. The profession is indebted to Dr. Herbst for many inventions and improvements in the field of dentistry, but by advocating the rotary method he has unwittingly done more injury than good.

From any method of filling, the practical results must be awaited patiently for several years, if no merit is supposed to attach to experimental investigations, such as Dr. Petermann or I have conducted. I am convinced that American dentists (including the most distinguished admirer of Dr. Herbst, Dr. Bödecker), will eventually arrive at the conclusion that the rotary method falls much short of yielding the results confidently expected of it.

What is Nedden's crystal-gold and wherein does it possess advantages over other preparations of gold? Nedden's crystal-gold (whose manner of production is a secret), is undoubtedly prepared similarly to other crystal-gold preparations, *i. e.* pure gold is dissolved in *aqua-regia* (one part of nitric to two parts of hydrochloric acid), and the gold is then precipitated by the addition of oxide of iron or oxalic acid. This precipitate, which was used by Watt without further preparation, for filling, is amalgamated with from six to twelve parts of mercury, gradually heated, and the mercury is dissolved with diluted nitric acid. The mercury, held in solution by the nitric acid, and the latter itself, is now washed with water from the gold until blue litmus paper is not changed to red, and the gold itself is exposed to a red heat in a muffle, having been placed on a platina or gold slab. The gold is now ready for use. Gold is manufactured as hard and soft; the slower the precipitating agent is added, the softer, more tender and fibrous is the structure of the crystals. Nedden's crystal-gold, however, is undoubtedly produced in a different manner. It is prepared in portions not unlike ducats; each ducat is a round cake about the size and thickness of a 100 franc gold piece. This cake, notwithstanding its diminutive size, weighs four grams, containing as much gold as a cake of Watt's crystal-gold or a book of gold foil. If the cake of crystal-gold is examined

under a magnifying glass, it will be found to consist of a beautiful structure of solid, highly brilliant wedge-shaped crystals; to the main or principal crystals smaller ones, of the same form, are anchored.



FIG. 1.—CRYSTALS OF NEDDEN'S CRYSTAL-GOLD (Magnified : 100).

If we remember that these crystals are closely interwoven, the advantages of this gold will be more apparent. When gold is dissolved in *aqua-regia* and precipitated by the addition of ferrous sulphate, the precipitate washed out until blue litmus paper is not changed to red, and the precipitate then exposed to a red heat for a short time, a crystal-gold is the result, which is even cohesive and suitable for filling purposes. Formerly I was of the opinion that gold thus obtained is not cohesive, but I found later that I did not sufficiently heat the gold. It should be brought to a white heat, preferably on a platina slab placed in a muffle. If this gold, which microscopically resembles Nedden's crystal-gold, be examined with a magnifying glass, we do not find the beautiful, lustrous, wedge-shaped crystals, but an amorphous gold whose lustre is deadened and which is by far not so cohesive as Nedden's crystal-gold, though the latter, in its cohesive property, excels all known gold preparations. According to Nedden the cohesive property of the gold is increased by passing it through the alcohol flame. It is true that annealing increases the property of cohesion, but the gold thereby becomes hard and does not

again regain its original softness for twelve to twenty-four hours. It is just as cohesive and far pleasanter to manipulate when annealed on a lamp over a feeble flame on one of the apparata constructed for this purpose, and kept for sale at dental depots. It is not necessary to shield the gold from light or moisture. It does not lose its cohesive property during an indefinite period; cohesion is lessened, but can be again regained by annealing, even after it has been exposed to all possible changes of the weather. If it has been dampened by the touch of the fingers, annealing will make it cohesive again, and no detriment to its use remains; indeed the gold may be placed under water, and after annealing again made serviceable. Particles of gold, which have been dropped into the saliva, and have become permeated with it, are made cohesive by annealing. It is better, however, to first wash the gold which has become permeated with saliva, or when, other foreign substances have also come in contact with it, it should first be washed with diluted nitric acid, and afterward with water until blue litmus paper is not affected by it. For annealing, Herbst's platina-muffle is very convenient. It should be exposed to the red heat of an alcohol flame for about one minute. At a meeting of the German Dental Society I proved the above assertions. In the mouth of one of the dentists a piece of gold was allowed to become saturated with the saliva, heated the gold on a platina slab in a muffle, tore it in two parts, placed them upon one another, and they cohered so firmly that a separation was impossible. This was condensed with a plugger and burnished against gold plate. On this plate I also laid a piece of gold foil, which on mere pressure cohered so firmly that separation without tearing the gold was impossible. At this same meeting I filled the cavity of a lower molar, using three grams of gold (eleven sheets of number four foil) in the remarkably short period of fourteen minutes. It was reported as follows: * "A patient, whom Dr. Claus secured, and who was entirely unknown to M. Schlenker (though Dr. Claus did send an impression to the former, who prepared suitable instruments accordingly) had a large crown cavity of one of the lower molars filled. The pieces of gold used were cut with an

* M. Schlenker. A system of filling teeth with Nedden's crystal-gold. Lecture delivered at the annual meeting of the German Dental Society, Dresden, 1886. *Deutsche Monatss. f. Zahnk.*, 1886, p. 419.

instrument corresponding to the size of the cavity, so that the pieces of gold were nearly the same size as the entrance to the cavity. These were warmed (not heated) in the flame of an alcohol lamp. The filling was completed with astonishing rapidity; only fourteen minutes were necessary to fill the cavity, requiring three-fourth ducats (eleven sheets of number 4 foil) of gold. Of course, the preparation of the cavity, application of the rubber dam, and the finishing of the filling required additional time. M. Schlenker used instruments of his own design, and these were especially noticeable by reason of their large condensing surfaces. The filling was condensed by hand pressure,

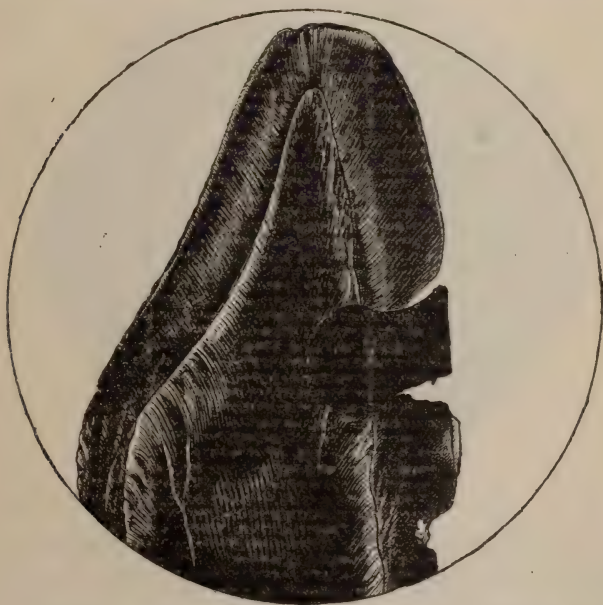


FIG. 2.—LONGITUDINAL SECTION OF A TOOTH AND GOLD FILLING.

except at the finish a few light strokes of the mallet were resorted to. Those present who examined the filling with a probe, pronounced it well executed; the solidity, condensation and perfect adaptation to the walls of the cavity was commendable." In Cassel, at the meeting as long ago as 1874, I filled for a dentist an approximal cavity and for M. Tyrol a lateral incisor whose crown was fractured one half its length, thus making a large contour cavity which was filled in thirty-two minutes. At this meeting

I also exhibited longitudinal and transverse sections with one, two, and even three gold fillings in one section; these sections were as thin as paper, and yet not the slightest displacement of the fillings could be observed even when examined under powerful magnifying glasses. Fig. 2 proves perhaps as well as anything the solidity of fillings executed with Nedden's crystal-gold. Although the enamel crumbled about the edges of the filling, while making the section, the filling remains as a solid mass. This tooth was extracted because of necrosis; the cavity I had filled about three years previously.

Fig. 3 illustrated a gold filling introduced into a root by hand

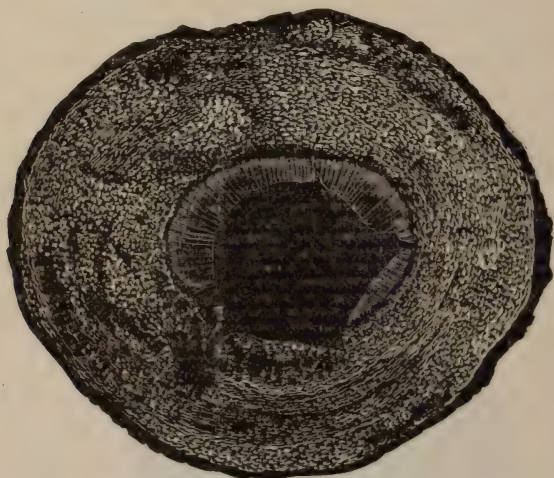


FIG. 3.—HAND-PRESSURE GOLD FILLING IN A ROOT CANAL.

pressure. With a fine excavator, four grooves were cut, and gold was so firmly and densely pressed into these grooves as though the gold had been cast into them. In the next figure is an illustration of a filling in a root canal introduced by Herbst's rotary method. These sections show that as good (if not better) fillings can be made with Nedden's crystal gold as with Wolrab's gold foil. The last illustration is of a section made through the incomplete filling, hence the hollow space in the middle of the filling. I photographed these preparations magnified fifty diameters, with Varhet's objective No. 1; the dentinal tubes are distinctly represented on the negative, which proves that the sections were made very thin and transparent. Retouching, which is for-

bidden when photographing scientific objects, and especially so when there is a controversy, was not resorted to.

This class of reproduction is of additional value, when it is remembered that an artist, if he be ever so skillful a microscopist, can not reproduce a picture as naturally as a drawing made by rays of light, *i. e.* photography. Indeed, the micro-photographer is often surprised, when developing his plates, to observe details which did not appear to the eye, while the section was under the microscope. This is a subject which should not be underestimated, because the impressions of the ultra-violet rays of light (to which

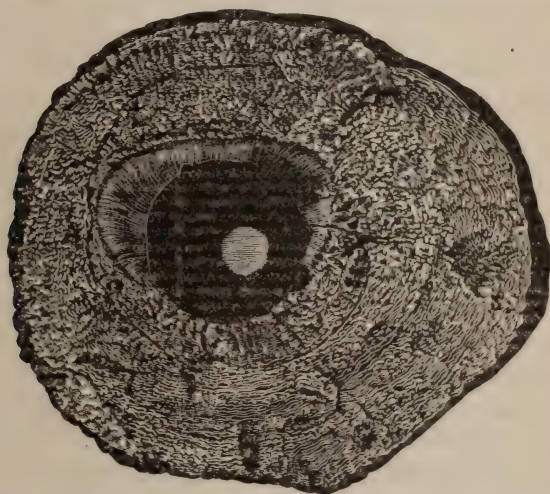


FIG. 4.—GOLD FILLING IN A ROOT CANAL INTRODUCED BY THE ROTARY METHOD.

the photographic plate is very sensitive) are always reproduced, while the eye is incapable of perceiving the ultra-violet rays of light.

Nedden's crystal-gold is preferable to other preparations of gold, for the following reasons :

1. It is more cohesive than any other preparation of gold, unites more rapidly with cohesive foil and with all other crystal-gold preparations, than do other preparations with each other.
2. Because of its massive crystallization it can be manipulated in one-third of the time required for any other preparation.
3. It can be used in any place for filling, and the result leaves nothing to be desired as regards solidity and beauty.

4. Even slight hand pressure is sufficient to press it into narrow crevices, where it becomes perfectly solid.

5. Its cohesive property is so inherent that after having been entirely moistened, by being annealed, it fully regains its previous cohesiveness.

6. It adapts itself perfectly to the walls of a cavity, even under hand pressure, and the first pieces remain in position without the aid of retaining pits or grooves.

The latter advantages alone speak for the general use of Nedden's crystal-gold. Retaining pits and grooves are not only the cause of loss of dentine but there is also danger of injury to the pulp. The cavity is prepared in the same way as for the reception of an amalgam or cement filling. Nedden's crystal-gold is more readily inserted than other crystal-gold preparations or gold foil, because it does not ball, or roll up, but remains in the place where it is laid and pressed. If a pellet of gold foil is pressed upon, it raises on all other sides, and this is true in an even more marked degree with a piece of Watts', Morgan's or other crystal-gold; hence the use of any of these gold preparations requires the cutting of a groove or the drilling of one or more pits, that the first portions of gold may be fixed immovably. Nedden's crystal-gold does not possess this unpleasant quality; it sinks only in the particular place where pressure is exerted. This preparation of crystal-gold has found many warm friends who advocate its use, because the gold possesses the above-named qualities.

At a meeting of the Dental Society of Central Germany, M. Kipp, of Coburg, made two contour fillings with Nedden's crystal gold in 55 minutes. The cavities were situated in the upper central incisors, which were considerably decayed on the approximal surfaces, with much loss of the lingual walls. For density and perfect execution, these fillings, made by hand pressure, proved highly satisfactory. The report of this meeting contains mention of the exhibition to the society, by M. Schwartzkopff, of a lower first molar, two-thirds of its volume being made of gold; the reproduction of the contour was perfect even in the minutiae, and required one-eighth of an ounce of Nedden's crystal-gold. This well known preparation was generally commended. M. Kipp is a well known gold operator, a pupil of Nedden, and has employed the latter's gold exclusively for twenty-five years.

At the Bavarian Dental Society meeting held during the present year at Nürnberg, the use of Nedden's crystal-gold was demonstrated by M. G. Mayer, of Munich. At this meeting the conclusion was reached that this gold is worthy of more extensive employment. M. Mayer permitted one of the members of the society to drill a hole into a filling in his own mouth, made of Nedden's crystal gold. This was accomplished with considerable difficulty. This gentleman passed his examination two year ago at the dental department of the university of Berlin, where the use of any other preparation of gold than foil is prohibited.* At present M. Mayer uses exclusively crystal-gold. I have frequently examined gold fillings on the anvil, but have never heard that clear metallic tone which is given off by Nedden's crystal-gold—a proof of its solidity.

If we remember that in many places gold is extracted from the pulverized soil by means of mercury, and that after the removal of the mercury the crystallized amorphous residue is immediately rolled into plate, it must be evident that Nedden's crystal-gold can be made as compact and dense by means of pressure.

If desired, the widow of M. Nedden prepares the gold in such a way as to make two small cakes of what usually would be one large one. For most cases this is better, because the cake is not so thick, and because it can be more readily sliced and cut into suitable pieces. For the generality of cases, suitable pieces may be torn off with pliers, of a size either of the cavity or as large as they may be readily introduced. The filling may be built up in such a way as may be desirable or as is the case, with other preparations of crystal gold. Packing must be continued until the surface shines brightly.

[*To be continued.*]

AMALGAM.

BY E. J. WAYE, D. D. S., SANDUSKY, OHIO.

There are from fifty to seventy amalgams now in the market, each one, it is claimed, superior in some particular quality to all the rest. Each one has its adherents, who firmly believe that

* I can not understand the reason why at a dental school only gold foil should be used, and no mention be made of crystal-gold.

when mixed and manipulated in a peculiar way, it will be found superior to all others; and while his method may differ in no respect from that of others, even though it may be printed upon the envelope or bottle in which it is inclosed, he does not hesitate to claim it as his own, and even to describe it in the dental journal as such.

A notable instance of this kind is seen in the January number of the *Archives of Dentistry*, wherein the writer describes his method in these words: "These amalgams have been prepared precisely alike, using the least possible amount of mercury, grinding thoroughly in a mortar and refraining from squeezing out of surplus mercury, but rather adding more amalgam when the mass was too soft." He mentions a dozen different "makes," which, when mixed "precisely alike," have been found "good or indifferent." To which of these classes any one "make" belongs he does not state, though from his method of testing one might suppose it would be no difficult matter to arrive at. The method is this. "In the record book a mark is placed opposite each amalgam filling on the diagram of the teeth, to denote the make of amalgam used." By watching these fillings, "little difficulty has been found in determining as to the quality of each. Several, he says, "have given very nearly the same results" (giving the list).

Having by these precise and unfailing methods determined which amalgams are best, he next turns his attention to the duties which dentists owe "to each other and the balance of the world." "We ought," he says, "to speak out more than we do, and let each other and the balance of the world know whose goods are the best in each particular department." "In this way we could save each other many a dollar, for worthless material" (we don't quite understand what he means by this, but it is what he says,) by which means "the people would be benefited, in having only good materials used in their teeth; the inventor would get repaid for his labor, and the *pretender* and *imitator* would be driven to sell his trash to quacks and charlatans" (whose patients, we suppose, if they have any, deserve no consideration whatever). He is shocked (and we don't wonder at it) by reading in the proceedings of a "Dental Association" this paragraph: "The members all agreed that the different makes of amalgam were all

about equal, except one, and that was declared *perfectly worthless*," and he demands the maker's name, thus: "Whose make was this, gentlemen?" "Why this nice delicacy in withholding the name of the amalgam?" And he remarks, for the benefit of that association. "It is much better for one manufacturer, whose only aim is to get money from the dental profession, to suffer loss than for half the dentists in the land to suffer both in *pocket* and *reputation*, by trying the worthless stuff," which is most certainly true, if the "only aim" of the manufacturer is as stated, and if the dentists, who it would seem are in some way obliged to *try* this worthless stuff, have a reputation, as well as a pocket, to suffer.

After the above bold declaration, we are not surprised to hear him conclude with a word of warning, thus: "Let me warn my brothers against certain parties, who claim to have analyzed and imitated the various makes of popular amalgams, and who are offering the spurious products of their rascally labors at greatly reduced prices. This thing bears the brand of 'Fraud' upon its face."

It is painful to be obliged to doubt the assertion of a man like this, whose methods are so peculiar and unique, whose researches are characterized by so much scientific knowledge and nicety, and whose statements are marked by such lucidity and perspicuity. And yet, when he "warns" his brothers against certain parties who "claim" to have analyzed the various makes of amalgam, may it not be possible that even this giant intellect may be squandering his sympathies, and that after all there is no "Fraud" (with a capital F)?

Let us suppose, for instance, that the claim to an analysis of the various amalgams can be substantiated. That it is an actual fact, and that the amalgams offered to the profession with the claim that the formula is identical with the one analyzed (the formula being printed upon the package containing it), really does contain the same ingredients and the same proportions, as the original. In that case the claim certainly is not fraudulent.

And who disputes this claim, outside of the tearful admonitor in the *Archives*?

Do the original compounders? It may be, but we have failed

to read or hear of it,—which may be certainly regarded as (to say the least) significant.

As to the “reduced prices,” the dentist should assuredly be the last man to complain. If there be fraud or injustice in this case, the man who does *not* suffer from it is the dentist, and he can well afford to await a demonstration from those who may feel that they are injured.

Then there is the satisfaction of knowing just what we are using, a satisfaction denied us in the past. The writer above quoted, it is true, declares such an analysis to be impossible and “the offering the spurious products of such rascally labors a Fraud.”

Others may, and do, hold a different opinion. There are many doubting Thomases in the profession, and it is not impossible that some one among them might have the presumption to ask him how he knows what he so dogmatically asserts. Might we even (such is the temerity of ignorance) request him to present the proofs that his mild and courteous statements, be sustained by irrefragable evidence. We are quite too modest and retiring an individual to assume that role, but we do hope that either himself, or some other person who is in possession of the facts in the case would, for the benefit of the profession so dear to us all, and which he and some few others are so certain is being deceived and defrauded, and in the interest as well of the injured inventors, who it would appear are struck dumb with astonishment over this pretended analysis, and what it reveals, would kindly and frankly present to the profession *all* the *facts* in his (or their) possession regarding it,—to the end that justice may be done, truth and righteousness prevail, and fraud and deception be unveiled.

Certainly no man should be permitted to publish such statements in regard to the various amalgams, without the requisite proofs to substantiate them, and we call upon those who deny these statements to bring forward the evidence of their falsity ; or if unable to do so, to cease their cry of fraud and dishonesty.

ON THE USE OF ANTIPYRINE AS A SEDATIVE IN ACUTE PERIODONTAL INFLAMMATION.

BY ARTHUR C. HUGENSCHMIDT M.D., D.D.S. (UNIVERSITY OF PENNSYLVANIA),
PARIS, FRANCE.

Amongst the numerous painful affections which the physicians and dental surgeons have to treat, one of the most common is certainly acute dental periostitis.

Having tried all the numerous remedies which have been recommended for the treatment of this affection (after first removing the cause, if possible), the early use of the knife, the painting of the inflamed parts with certain sedative tinctures, or the use of rapidly evaporating liquids sprayed on the parts—such as rhigolene, ether, to produce a local reduction of the temperature and so act on the circulation—I had hoped at last, when cocaine was brought to the notice of the profession, to find in it an excellent remedy for this trouble. I was, however, soon disappointed, for after having tried the hypodermic injections of muriate of cocaine in over ten cases of acute periosteal inflammation due to variable causes, for the purpose of relieving the severe pain, which is always a prominent feature in this trouble, I soon found that it was of not much use in inflammatory conditions, and even in two or three cases the injection produced an accentuation of the pain without any material benefit to the case.

Finally I had returned to the old remedies recommended in such conditions, when, in August and September, 1887, Prof. Germain Sée recommended before the *Academie de Medecine* the use of antipyrine as a general sedative. I then from that time made use of this drug in many painful dental affections of a neuralgic character, with excellent results.

The first case was that of a patient suffering from a very severe neuralgia of the fifth nerve on the right side. The pain was so unbearable, the patient, a man of about 30, could not remain a minute quiet. The pain was supposed to proceed from an upper wisdom tooth which had been filled and had produced a dental periostitis, the pain of which had been local for 48 hours, but which afterward became general, extending to all the branches of the fifth nerve. A trismus prevented the jaw from being opened enough to allow the removal of the diseased tooth, and, the pain apparently increasing, I resolved to inject directly

through the cheek from the exterior a solution of fifteen grains of antipyrine and one-third of a grain of muriate of cocaine in fifteen minims of water, introduced in the center of the most painful region. The injection produced a great increase in the pain, which disappeared in less than five minutes, when the patient experienced already a marked relief, and half an hour later the pain had entirely disappeared.

The next day at the point of injection there was an induration, with some local swelling, which was painful to the touch only. The application of tincture of iodine removed this local trouble in a few days; the patient remained well, and had no more return of his neuralgia.

My second case was a patient suffering from a very severe intercostal neuralgia, which had lasted continuously for three days. Fifteen grains of antipyrine injected in the painful region relieved the patient in less than half an hour.

I have now used this method in eighteen cases of acute periostitis due to a dental cause (dead tooth, filling too near the pulp, producing pulpitis and inflammatory extension therefrom, periostitis due to external causes), and in all have had very satisfactory results.

My excellent preceptor, Dr. Thomas W. Evans, has also used this drug in several of such cases with very good results.

The solution of antipyrine I now use is the following :

R. Antipyrine, 3 j.
Aq. Distill. f 3 j.
M. Dose: xv. minims.

The injection of antipyrine being a very painful one, Prof. Sée had recommended the addition of cocaine in the prescription to prevent this very severe, painful sensation, but I must say that I have found no difference as regards pain when injecting the pure drug or when I combined it with cocaine.

I have, however, used, with greater satisfaction, cocaine, injecting it alone into the parts five minutes previous to making the injection of antipyrine; by using the cocaine separately it seems to produce the results Prof. Sée wished to obtain.

Before I make my injection I direct the patient to rinse his mouth with a solution of permanganate of potash. Then I touch the part to be injected with a bit of cotton dipped in a bichloride solution (strength $\frac{1}{1000}$).

I then inject into the most painful part, usually opposite the end of the root, one-third of a grain of muriate of cocaine dissolved in six minims of water; then wait five to seven minutes to allow the local anæsthetic action to manifest itself as much as it will in an acutely inflamed tissue. Next I make slowly, in that partly anæsthetized region, the injection of fifteen grains of antipyrine in fifteen minims of water.

There will always be an increase of the periosteal pain, which will last from ten minutes to three-quarters of an hour, after which time all the painful sensation will have passed away and the patient feels relieved.

I have always found this to be the state of the parts injected on the following day: An induration surrounding the point of injection; a local swelling indicating a local cellulitis produced by the introduction of a drug which has an irritating effect on the parts with which it comes in contact; irritation demonstrated by the pain produced during the injection; a certain amount of pain to the touch only accompanies the induration, but no acute pain whatever.

I have never seen any local sloughing of the parts injected, which is probably due to the antiseptic precaution taken in every case.

In the following case, as in several others, I have combined the hypodermic use of the antipyrine with its internal administration.

A gentleman applied to me for relief from a very severe dental periostitis which had given him continuous pain for several days. The seat of the trouble was a lower first right bicuspid, in which a large, beautiful contour filling had been inserted some years previous. The removal of this filling was, of course, out of the question, on account of the sensitiveness of the parts. Cocaine muriate, as described before, was injected, and five minutes later fifteen grains of antipyrine. In about forty minutes the pain was already much less severe, but the patient, being obliged to leave the office, I did not care to let him go still suffering. I gave him fifteen grains of antipyrine to take internally in half a tumbler of water before me. When he returned next day he reported to have felt perfectly well a few minutes after he left

the office. The pain did not return again, the only trouble being the slight local inflammation of the injected part.

The combination of the hypodermic injection of the drug with the internal administration of fifteen grains of antipyrine half an hour after the injection—this same dose to be repeated at bed-time if the trouble shows any tendency to return—will certainly afford relief to any suffering patient, and if the drug is pure, no general symptoms at all are to be expected or feared.

The following interesting case I might mention here: A gentleman came to me three months ago with a double periostitis, one of which was produced by a lower right wisdom tooth; the other being due to a right upper first bicuspid. Both had been filled with amalgam, before the patient left his home, on putrescent pulps. Both these teeth were exquisitely sensitive to the touch, and the signs of local periostitis were undoubtedly present opposite each tooth. The wisdom tooth being the most painful, I injected in that region the antipyrine solution. The pain disappeared in about three-quarters of an hour; but I did not inject any opposite the upper bicuspid. The patient was also given fifteen grains of antipyrine internally and dismissed. He left Paris that same night, and only returned a week later, when he reported that the wisdom tooth had given him no more trouble or pain after the injection; but the bicuspid, on the contrary, kept on aching until an alveolar abscess formed and was opened.

The post-operative incidents—induration and local swelling—will last from five to ten days; but being only painful to the touch, and even not much so, they can be overlooked when you consider the benefit which a suffering patient derives from an antipyrine injection.

In several cases of acute pulpitis I have used the saturated solution of antipyrine, applied directly to the congested pulp, on a piece of cotton wool, with excellent results in the majority of cases. It certainly deserves to be tried when the usual remedies fail to afford relief.

I have used it also solid, combining equal parts of it and arsenious acid to destroy the pulp. It produced no pain in three cases; still the number of experiments is not sufficient to allow one to express an absolute opinion on this particular way of using this drug.

THE DENTISTS AND THE AMERICAN MEDICAL ASSOCIATION.*

BY C. M. WRIGHT, D. D. S., CINCINNATI, O.

It does not seem to exactly accord with the "eternal fitness of things" for the host to read a paper before his guests. It looks like a disposition on his part to entrap his hearers—to invite them to meet at his house, and then to occupy their attention with his own paper. But this has been done before in Cincinnati at our meetings, and it has proved to be a good scheme. I follow the example of distinguished confrères. I have thought that some expressions of opinion on questions of the day from me might provoke discussion, and dentists, like doctors, lawyers, and clergymen, appear to enjoy themselves more intensely than at other times when engaged in discussing. Let us discuss! First, let's talk about the new position in which we have been placed by the medical profession. This month, at the meeting of the American Medical Association, which is the National Medical Congress of the United States, and which consists of members who have formerly been recognized as delegates and representatives of medical societies in affiliation with the association, and of delegates sent as representatives of medical societies throughout the United States to this association,—we, the dentists, not bearing the titles of medical men; not possessing the degree which is required of all other members of the association, but possessing a distinct title, which is as distinct as doctor of laws, or doctor of philosophy, or doctor of theology, from the title of doctor of medicine; we dentists, who have separate colleges in no way dependent upon medical or separate teachers in these colleges, many of whom never saw the inside of a medical college; separate periodicals edited by dentists; separate societies not in affiliation with or at least entirely independent of and in positions of apparent neglect and disregard of medical ethics and medical societies; we dentists have, upon invitation of the medical profession, sent delegates to this congress, and have been admitted as members, with full privileges of other members. We have taken our places in the general meeting and in the sections, have voted upon business and other questions presented to the society, and no questions have been asked. We might have been

*Read before the Odontological Society of Cincinnati, May 30, 1888.

eclectics, homeopaths, hydropaths, or vito-paths. No questions have been asked or answered. We might have elected irregulars, so called in medicine, as officers of the section of oral and dental surgery. Our chairman might have formerly practiced homeopathy or vito-pathy or faith cure; our secretary might be professor in a psycho-medical college institution. No questions have been asked, no record of the past required. All that was necessary was: Is he a dentist? Has he a certificate from any dental society? Gentlemen, how can we receive this otherwise than as the highest compliment that it is possible for one profession to pay to another? How can we receive this otherwise than as the complete and graceful acknowledgment of respect and regard and appreciation of one profession for another? Could we do more for the medical profession than this? Could we show it more distinguished consideration than to accept as delegate members of our American Dental Association, members of the medical profession who might be sent as delegates or representatives of purely local medical societies? I think not. We have never done it yet. In this new state of affairs would it then be improper for us to consider two things at this present time in regard to it? First, why was the compliment paid? and, second, how shall we gracefully respond? In regard to the first: Has this compliment been paid to us because of our skill in our daily work, our inventions, our improved appliances, our finger craft? Have our contour gold fillings, our Richmond or Logan or How crowns, our bridge work, our inter-dental splints, our vulcanite and celluloid and aluminum plates, our operators or our porcelain teeth been the causes of this? I think not. It is our dental anatomy and physiology and pathology and embryology and etiology that have done it. It is distinctly our science and not our art that has called out this acknowledgment. It is a tribute to dental science. The science of medicine and the science of dentistry are twin sisters. They were born so and can not help it. This can not be otherwise. The art of medicine and the art of dentistry are as distinct to-day as they were forty years ago, and will remain distinct—must remain distinct. The arts rule with us. We can not give up our art and remain dentists. But we are placed in the proud position of the practitioners of a distinct art, or, in other words, of artists or artisans who have so

dignified their art by scientific attainments that scientific men hold out, unsought, the right hand of fellowship to them. We have accepted this right hand of fellowship by our acts of sending delegates from our society to the American Medical Association.

The Mississippi Valley Association of Dental Surgeons (the oldest dental society of the West) and our little Odontological Society of Cincinnati are the only two purely dental societies ever represented in the American Medical Association. Let us tonight, in our first meeting after the reception of us by the medical fraternity, return thanks for the compliment paid to us, and do what we can to place our society in a proper position of affiliation with the American Medical Association by adopting its rules and code of ethics as far as such rules and code may be possible in our practice of a distinct profession.

Let us be as generous as the medical profession has been ; acknowledge her as our elder sister, embrace her, and pass the following resolution :

Resolved, That the Odontological Society of Cincinnati, in consideration of the fact that delegates from this society have been accepted and cordially treated by the American Medical Association of the United States at the session of 1888, does hereby accept and acknowledge the code of the American Medical Association as her guide in professional matters from this date. (In so far as such code is practicable in the practice of dentistry.)

Gentlemen, I take a peculiar pleasure in offering this resolution this evening, from the fact that for years I have held positive and decided views in regard to the distinctiveness of the two professions. I have never considered a dentist anything more than a dentist, and by no means a member of the medical profession. I have never considered a physician, or doctor, or, in other words, a medical man, as a dentist, or in the least competent to practice "dentistry." I am in favor now, and have been for twenty years, of the separate education of dentists and "doctors," of separate colleges, separate faculties, separate or distinct titles. I have no more regard for the title of M. D. than I have for the title of D. D. S. Neither includes the other, nor is one a part of the other. I can not but feel proud of the younger profession of dentistry and of her attainments in science. I have no idea of our pre-

tending to appear as medical men by this resolution, or of giving up one iota of our dignity or individuality by this friendliness for and from the older profession. I simply wish to be as polite to the medical profession as she has been to us.

PRESIDENT'S ADDRESS.

BY DR. H. T. KING, FREMONT, NEB.

Gentlemen of the Nebraska State Dental Society: It seems but yesterday since I was, by your courtesy, invited to preside over this, the twelfth annual meeting of our society.

If at a time in the world's history, when the slow tread of the camel measured the speed of the traveling train, the patient old patriarch could say "My days fly swifter than a weaver's shuttle," what simile may we use in this age, when our time is so filled up with the rush and cares of a busy life?

Short as the year has been, many events, many changes, has it witnessed. Some who, years ago, when dentistry was but in its infancy, commenced the practice and made it a life work to serve well their patrons and do much for the advancement of their fellow practitioners, have passed away. Others of our acquaintance who had but just entered upon the work, and bid fair to run well the race, have been called to give an account of their stewardship,—all reminding us of the fleetness of time, and that whatever we do we must do quickly.

On the other hand, to take the places of those who fall by the way, we have from year to year a constantly increasing number who, from different motives, choose the profession of dentistry as the one most suited to them. Men who have spent the best years of their life in making dentistry what it is are the last to object to young men, if properly prepared, coming forward to take their places to reap where they have sown; but they have the right to say that those entering the profession shall be so prepared as to at least maintain the position gained. And so the cry, "Elevate the standard," is heard on every side. Our journals seem to vie one with the other as to which shall proclaim it the loudest. Nearly every society report contains a paper bearing either directly or indirectly upon the subject, while almost every state, by means of the pressure brought to bear upon it through the in-

fluence of the dental profession, has been induced to put its legislative hand to the good work.

In proportion as the standard is high will be drawn into our professional ranks men of corresponding talents and capabilities, and in proportion as the standard is low will it be the resort of the ignorant and avaricious, whose only aim is to gain as much as possible from the position they hold, and in return to do little or nothing by way of honest work or earnest endeavor to advance themselves or help others.

I recently heard a dentist spoken of as being remarkably successful in his profession, and likely to soon stand above all others in his own and neighboring cities. The estimation was based on the fact that he had in two and one-half hours made \$15, having administered gas and "prepared a mouth" and put in eight amalgam fillings in that time. That is success according to the standard, but some there are who will claim the standard to be low.

The answer to the question of how to elevate the standard of dentistry always comes in one word,—educate.

Given his choice, the intelligent physician or dentist will select an educated in preference to an ignorant neighborhood in which to practice, and the large numbers of intelligent people with whom we are brought in contact in our practice demand that we should be something more than skilled mechanics.

It is not my purpose to criticise our dental colleges or try to tell how they should be conducted.

To most of us here to-day the time for preliminary education has passed ; but to those who would keep abreast with the times a course of hard, persevering, systematic study seems inevitable. A stimulus and aid to this study is and has been supplied in the organization and maintenance of dental societies ; and this, gentlemen, brings me to the point I wish to make.

If there is a point in this rather rambling address it is this : the importance of making our meetings so practical and instructive that men when once brought to attend will feel that they are losing something by remaining away. They are periods of education—education in its broadest and best sense.

To all of us they are useful, and to many, perhaps, essential, affording, as they do, such admirable opportunities for the com-

parison of notes and for the selecting and incorporating into our own practice that which has proven to be the best and most successful with others. The most efficient and certain means of elevating the status of our profession is to educate and so elevate ourselves.

It is said of the poet that he is "born, not made." To some extent this is true of the dentist, for he who possesses the genius that is prompt to discover the relation of cause and effect, and intuitively discerns the shortest and best means to accomplish a given end, has much the advantage over one not so favored. Yet he who runs swiftly does not always win the race. One may *invent* some new appliance or method of operating, while another, who has never thought of a new thing, has the manipulative ability and power to imitate, that will take hold of the idea and make it a greater success than the first one ever could. We see this in the history of the electric mallet. A Bonwill may originate, but it takes the genius of a Webb to make it a success.

I think it safe to say that every member here has at least one good thought or some little trick that has helped to make his work easier and more successful, that if it could be brought out would help some and perhaps many others. And that is what we are here for. Intercourse one with another stimulates activity, provokes thought, and leads to new and better methods. No one is so lacking in mental or mechanical fertility that he can not contribute something of interest.

This we owe to our profession. Its years of probation and growth have given it position, its accumulated culture has given it influence, and any one entering it is benefited in proportion to his ability to appropriate these results and advantages. So by the choice of a profession we assume an obligation of which we should ever be mindful, and the thought should stimulate a desire to contribute something, be it ever so little, for the benefit of our associates.

Gentlemen, I congratulate you upon your ability to attend this meeting. To me it is always an occasion of much social pleasure and intellectual gain.

There is magnetism in numbers, there is force in associated effort, and the high object of this organization calls for all our zeal and labor.

Let us, then, be united and active in maintaining the influence of this society, which is powerful to advance and elevate the character and attainments of the profession in our state.

PROCEEDINGS OF SOCIETIES.

NEBRASKA STATE DENTAL SOCIETY.

The twelfth annual meeting of the Nebraska State Dental Society was held at Grand Island, Nebraska, May 15 to 18, 1888. The number present during the meeting was over forty, and the active and accessory membership of the society is about fifty. Action was taken to insure the enforcement of the law regulating the practice of dentistry in the State. Dr. H. T. King, of Fremont, president of the society, delivered the annual address, which will be found on another page of this number of the *REVIEW*.

The forenoon of the second day was devoted to clinics. Dr. J. C. Holland, of Creston, Iowa, described the method of casting aluminum plates by Dr. Carroll's process; Dr. W. H. Stryker, of Beatrice, Nebraska, inserted a large approximal filling extending over the cutting edge of a central incisor, using the Finney engine pluggers and an automatic hand mallet. Dr. Louis Ottofy, of Chicago, implanted an upper right first bicuspid for Dr. I. W. Funck, the secretary of the society. Almost the entire socket was made with the Ottofy crib knife; cocaine was employed successfully, the operation being almost painless; the tooth was not ligated, being held in position by the proper shape of the socket.

At the afternoon session the clinics were discussed, Dr. Stryker's operation being highly complimented, especially as to thoroughness and perfect finish of the filling. The entire subject of implantation from a historical, physiological and practical standpoint was reviewed and the operation from beginning to end minutely explained by Dr. Ottofy. The probable form of attachment of the tooth to the socket was, according to Prof. L. C. Ingersoll, of Keokuk, merely one similar to gomphosis.

Dr. H. L. Cole, of Norfolk, Nebraska, read a paper of which the following is an abstract :

PYORRHŒA ALVEOLARIS.

By DR. H. L. COLE, NORFOLK, NEBRASKA.

In making the report on Dental Pathology, Surgery and Therapeutics, at the suggestion of the president, I report in the form of a paper on Pyorrhœa Alveolaris. Coming, as it does, under the head of Pathology, there is no other disease which attacks the oral cavity, that should claim more attention and investigation than the destructive inflammation of the peridental membrane, generally known as Pyorrhœa Alveolaris.

It is true that of late years considerable has been written concerning the disease by Drs. Wm. H. Atkinson, A. W. Harlan, G. V. Black and others; but is it not true that, to the average dentist, no disease coming under his notice is so poorly understood, so unsuccessfully treated, yielding such poor results as the disease in question?

How many dentists are able to properly diagnose the disease when they see it?

There are many cases of this peculiar lesion which puzzle the diagnostic ability of our ablest men. Prof. Black in his able article on Phagedenic Pericementitis (the name by which he designates this disease) in the *American System of Dentistry* says: "It sometimes happens that a case of alveolar abscess simulates the form of Phagedenic Pericementitis so closely as to cause a mistake in diagnosis. In this case an abscess occurs at the root of the tooth from the previous death of the pulp, and consequent apical pericementitis, and the pus, instead of being discharged by any of the more usual routes, eats its way along the side of the root and is discharged at the margin of the gums. In this process the peridental membrane is destroyed over one side, or a portion of the side of the root, forming a narrow pocket, in some cases very much resembling the very deep pockets of Phagedenic Pericementitis.

If in such cases it is remembered that, when pockets of such magnitude are formed by the disease in question, there are very sure to be other points of attack in the same neighborhood, it will do much to clear up the diagnosis. The absence of these should

always rouse a suspicion that the case may be one of alveolar abscess and lead the inquiry in that direction."

It will not be amiss to give some of the symptoms by which we may safely arrive at a proper diagnosis. It is a disease essentially of the peridental membrane, and as such may have its beginning in a gingivitis that in its inception can not be distinguished from simple inflammation of the free margin of the gum, or its character may be shielded by deposits of salivary calculus.

As far as I have been able to notice the beginning of the disease, it usually takes the form of simple gingivitis, presenting quite an inflamed condition of the gums at their free margin about the teeth attacked; as this disappears, the disease advances, or possibly becoming less apparent on account of the more general redness of the surrounding gum tissue. By close examination we find the lower margin of the peridental membrane destroyed in places, so much so that a thin but dull blade of an instrument would pass up much farther than it should, and by pressure on the gum usually pus will be seen to ooze out between the gum and the neck of the tooth. This destructive process extends gradually toward the apex of the root of the tooth, following the length of the fibers of the membrane, and in most cases narrow deep pockets are formed. Usually the presence of the pocket can be detected at a glance by the dark red appearance of the gum over it. Being a peculiar inflammation that causes the destruction of the peridental membrane, followed closely by the absorption of the walls of the alveolus, it occasionally happens that there is no abnormal appearance of the gum tissue.

These are the cases that have sometimes failed of detection by reputable dentists, even after the patient has called attention to soreness and considerable looseness of certain teeth.

As to the etiology, or cause, of the disease, we as yet know but little, some claiming that it is purely local, and others that it arises from some constitutional disorder. Those holding to the former theory tell us that it is caused by some peculiar forms of micro-organism, or serumal or salivary deposits on the roots of the affected teeth.

We are rather inclined to the latter theory, that it is caused by some constitutional disturbance, generally that form of kidney trouble known as "Bright's Disease," and in this direction it

seems to me that our investigation and research should be directed.

In all of the most pronounced cases that have come under my observation, inquiry has brought to light the fact of constitutional derangement in some form. The most severe case I have ever seen was that of a lady who was quite a sufferer at times from disease of the kidneys. Another case was that of a young man who died a few months after I first saw him, of a constitutional disorder that I suspected was at the bottom of the disease affecting his teeth.

Whether the disease is purely local or only the symptom of some hidden disturbance, our treatment depends largely upon local remedies; and if we have the disease in its first stages, it readily yields to local treatment. But the old chronic cases, where the pockets have advanced half or three-fourths the length of the roots, and where the teeth are so loose that they are almost ready to tumble out of their sockets, these are the cases that try the skill of the best operators.

This brings us to the therapeutical and surgical phase of the disease. The local treatment consists, first, in removing all deposits, if any, from the roots of the teeth, and for this part of the operation there are quite a number of instruments specially adapted, following with a properly shaped bur, to remove any diseased and ragged edge of the alveolar process, then using a solution of peroxide of hydrogen and bichloride of mercury to cleanse the pockets of pus, followed by an application of Robinson's remedy. This treatment kept up, with some variations in remedies, as the nature of the case may indicate, for a week or ten days, and a thorough cleansing of the mouth after eating each time, is usually all that is required as far as local treatment is concerned.

But in those aggravated cases we must do more than give them the local treatment, if we wish to meet with success. We must devise some means to hold the teeth firm for months, and even years sometimes.

In discussing the paper, Dr. Plummer stated that he doubted the efficacy of so many drugs now employed for the cure of this disease, and believed that much of it was entirely useless; he believed in thorough cleanliness, and used a saturated solution of iodine with good results.

Dr. L. C. Ingersoll admitted that the disease still presented many phenomena which were not understood, and hence, the treatment is, and has to be, to a very great extent, entirely experimental. The results are not universally satisfactory, and the treatment must be varied within an extensive range; what often results in cure in one case may be entirely useless in another. It is an undecided question to what extent constitutional conditions affect the disease, or whether constitutional disturbances are the cause or the result; but it is certainly true that constitutional derangements have very unfavorable effect on treatment. He called attention to the confusion created by the many names given to this disease by different writers. Under no circumstances is it excusable to mistake a case of pyorrhœa alveolaris for alveolar abscess. The remedies suggested are good; to them may be added aromatic sulphuric acid, sulphate of zinc and chloride of zinc; the latter must be used very cautiously. The disease is undoubtedly one of the periodontal membrane and the alveolar process; its cure depends largely on the entire removal of all diseased parts of the latter tissue.

Dr. Louis Ottofy advised confining the removal of the deposits and the subsequent treatment to a few teeth at a time. In most cases one sitting will not permit of thorough treatment and medication of an area including more than two or three teeth. Over-medication must also be avoided; many cases need but two or three treatments after the removal of the deposits and diseased tissues had been accomplished.

Dr. I. P. Wilson believed the co-operation of the patient to be an essential necessity in the treatment of this disease. The best efforts of the operator are futile if the patient makes no effort to keep the teeth, gums and mouth generally in a clean condition. The patient must enjoy good health to insure a production of new tissue. The disease is not so common among people who keep their teeth clean than among those who do not.

[*To be continued.*]

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THE INDEPENDENT PRACTITIONER.

With the July issue the above journal comes to us bearing the name of W. Xavier Sudduth, M.D., D.D.S., as editor. In a somewhat lengthy salutatory the new editor defines the policy of the journal for the future,—which does not differ materially from its trend in the past,—reserving until the close of the year the marked changes that are to be inaugurated. It is proposed to make of *The Practitioner* a truly international journal, one that will more nearly fill the void now existing in this respect. The journal will advocate a higher and broader education for dentists; and as it is proposed to issue stock to those who will subscribe and pay for it—some of the subscribers now being interested in colleges—it is hoped that the editor will convert those who are known to be strongly in favor of two terms of five months each, and in this way effect a much-needed reform. Almost every neophyte who goes into dental journalism is strong for reform in various directions at the outstart, but in many cases he begins to lose that burning enthusiasm which consumed him in the beginning, when he learns how few readers—compared to the total number of members of the profession—there are. The new editor will find—as the old ones already know—that a vast number of dentists, like other people, like to read or take journals, but they do not like to pay for them. This is one of the many reasons why dealers and manufacturers can afford to publish a journal and pay the editor for his services, for if the subscriber does not pay promptly, the profit on the goods sold him will soon overbalance the pittance necessary to pay the printer's bills. Inde-

pendent dental journalism cannot thrive as a paying investment, in dollars, without a large subscription list of paying subscribers. Advertisements must be taken from manufacturers, and very few editors have the courage to criticise the wares advertised for fear of losing a part of the revenue derived from their patronage. THE DENTAL REVIEW, in its short career, has lost the patronage of three or four advertisers because it would not laud the wares advertised. It is now threatened with another such loss. The dear dental public, in the innocence of its heart, may suppose that money is not needed to run a dental journal, but it is mistaken. Cash is required.

From the long list of stockholders of *The International Dental Journal* association, we believe that it will live and be able to publish a reputable, high class journal, which will pay for itself and remunerate the editor for his time; but some of the capital will necessarily be consumed at the beginning in order to make the venture a financial success. Our best wishes are extended to the new corporation and a fraternal handshake is given to the new editor.

DR. BARRETT.

It is with sincere regret that we part with Dr. Barrett. We have been one of his supporters from the time he took upon his shoulders the editorship of *The Independent Practitioner*. We have always looked forward to the day when his journal was sure to come to the office (rarely delayed for a single day), when it was immediately opened, if only to look for the table of contents. Now that we are no longer to read the familiar name on the outside cover, we are filled with sorrow at the necessity for his leaving the editorial tripod and devoting himself to a growing practice and much-needed leisure, in the hours formerly devoted to the journal. We cannot forbear saying thus publicly, that of all the dental journals now published in America, none bore the personality of the editor more than did *The Independent Practitioner*. It was this personality, the impress of Barrett, that caused us to feel that it was his journal and the readers'; it brought them closer together. When we essayed journalism in all probability we patterned after our friend; if we shall succeed in so

impressing our readers, we will know with what personal feelings of regard we will be held by our friends, and what tribute of personal regard can go out in cold, unfeeling print stronger than this, the reader's sorrow at parting from an old friend and teacher? Knowing Dr. Barrett as we do, we are sure that the profession will not remain in ignorance of his existence, as his retirement will not mean cessation from literary labor, and the initials W. C. B. will in the future, as in the past, gladden the eyes of his professional friends.

EXASPERATING.

In looking over the programmes of the several state societies which have held meetings this year not more than a thousand miles from Chicago, we have been struck by the number of essayists and clinicians who figured thereon, and who were not members of the societies.

On inquiring we have learned that many of the essayists and clinical operators failed to come to the meetings, send their papers, or operate before the society.

The members of the executive committee may in some instances have placed names on their programmes without consulting the essayist or operator, but in the majority of cases the gentlemen whose names appear on programmes have promised to be present and read a paper, open a discussion, or operate before the society. The fact that the names are on the programmes is an inducement to many to attend a meeting. When gentlemen fail to be present at a meeting and send no excuse, it is, to say the least, discourteous to the society and a reflection on the executive board who advertised them as an attraction. At Louisville only two of the outsiders on the programme were present at the meeting; at Terre Haute only one out of a dozen. At the Illinois meeting there were several conspicuous by their absence, and likewise in Iowa and perhaps elsewhere. This is a method of getting prominent mention in outside territory which we can not commend, and we trust less thoughtlessness and a closer attention to what is expected of a professional gentleman will govern the actions of a greater number in the future, when they promise to do work which they are competent to perform, but fail in,

through neglect and a want of correct business methods. In reading over the above we have concluded to offer a suggestion to programme makers as a fitting conclusion to this homily: First of all, the talent in your own state should be developed. Second, make a "card" of one or two outsiders for a paper, and not more than two or three clinicians. Third, do not place any name on a programme without a distinct promise from the owner to be present. Fourth, do not try to make a four-day meeting when you have material for only a three-days' session. Fifth, do not get up outside excursions or side-shows to distract the attention of the members or visitors. Our sermon is finished.

ANTISEPTICS AND GERMICIDES.

In the report of the last meeting of the Illinois State Dental society, as it appears in the June number of the DENTAL REVIEW, on page 331, while referring to the use of antiseptic precautions in replanting teeth, Dr. W. N. Morrison, of St. Louis, is quoted as saying that he had "tried both methods—with drugs and without—and with equal success."

Had this sentence been uttered by any person less prominent than Dr. Morrison, or by any one for whose opinion we entertained less regard, no attention would be paid to the remark; but coming, as it does, from a man whose utterances carry weight and influence whenever or wherever they are repeated, they are worthy a more careful consideration.

The point in question is one of unusual importance. Is it possible that we have studied the pathology of many of the diseases, and, having concluded that they are due to parasites or microbes, we are still in error? Is there no truth in the theory of infection? Is our knowledge of microbes, and of drugs which are deadly to them, fallacious? If a case where a tooth had been extracted and replanted without any precaution to exclude infection, becomes successful in the hands of one man, why the painstaking precautions by means of germicides on the part of another?

We do not doubt that Dr. Morrison is successful in many cases of this character, and perhaps with others, without resorting to any drugs. It is even possible that some drugs may be injurious and their application inadvisable; but we are of the opinion that

the teaching of a doctrine dispensing in the minutest degree with the free use of suitable germicidal precautions is not a judicious one in the light of our present knowledge of this subject. Whether the drugs said to possess germicidal properties are so or not is of no consequence. We do know that under their use wounds generally heal by first intention. We know that the presence of pus—which is always an irritant, and, if not, the product of germ life, or even if germs be not the product of pus, is certainly a very favorable medium for their existence—is unfavorable to the kindly healing of wounds; and that the drugs known to be germicidal do prevent the formation of pus is a fact proven beyond controversy. Modern surgery would lose its strongest pillar if this were not true. Therefore, while success may occasionally follow the treatment of cases where the use of antiseptics is indicated, it will be found advisable, as a rule, to be on the safe side, and resort to some of the many suitable germicides now known to dentists in all cases of a surgical or semi-surgical nature.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

To the Editor of the Dental Review:

DEAR SIR: The Dental society of the state of New York, in convention held in Albany, May 9-11, celebrated its twentieth anniversary, which was at the same time its twenty-first birthday; thus it may now claim maturity. In common law individuals are considered infants until arrived at the age of twenty-one, and until such time must express all legal demands through a "guardian."

In this light it may be said that Dr. Wm. Carr has been the guardian of the New York State society, and right well has he acquitted himself; for not only has he demanded and obtained recognition for the society at the moment of its maturity, but more than that: he has had a law passed, which for the future makes the society "guardian" of the dental profession in this state, a most responsible position for it to assume on its entrance into manhood.

This is metaphor, perhaps, but thanks to Dr. Carr and his aides, it is likewise truth, stern reality, as all will find in the future who dare to advertise themselves "dentists" without the ability and the right to make such a boast. It may not be uninteresting for you to have a brief resumé of the law, so that readers of your journal, who may be tempted to the Empire state by her wealth, may know in advance whether the door will be opened at their knock, and especially who the gate-keeper is; for wo be to him who climbs over the fence, hoping to escape the boot of justice, which will as surely expel him as it is that he has no legal right to remain. Legal right! Doesn't that sound glorious? To think we have "legal right" now to practice our profession and keep the dental vultures from making carrion of our people's teeth. I feel just like echoing the cheer that greeted Dr. Carr's announcement that the governor had signed the bill. But let me tell you of the law. Hereafter a man must register with the county clerk in the county in which he wishes to practice. He must register again if he move to another county. The county clerks shall not register any man who does not qualify by presenting a diploma, with a certificate attached, stating that said diploma is recognized by the state society. Said certificate is drawn and signed by the state censor (a member of the state society) of the district in which the candidate wishes to practice. A man may not practice, doing work for another dentist as a paid assistant, or managing a branch office, unless said assistant be registered. The law, however, in no way militates against a student in the true sense of the word. That is about all, but it is as strong as it is simple. The state society, through its censors, absolutely controls the practice of dentistry in this state.

The meeting was well attended and papers of interest read, the most valuable being the report of the committee on practice, read by Dr. Rhein, which, however, I am informed, is to appear in your journal.

Dr. Southwick did not read a paper, but gave a most interesting "talk" on vulcanite dentures; and as there is one point explained by him which I think is the most valuable idea of the kind ever offered, I shall give it in detail. Dr. Southwick claimed at the outset that a plate vulcanized as is the usual custom will not fit the mouth, and then proceeded to demonstrate

first the fact, then the cause, and lastly the remedy. He showed a plate on a cast, and told us that that particular plate had been vulcanized on that identical cast, and then passed it around that all could see that the plate did not touch the model at the heel, especially up along the sides. This is explained as follows: rubber is packed soft, and the rubber, cast and flask heated up to 320° , at which point the plate is fixed by vulcanization. It is plain that at this temperature the plate is accurately adapted. Now, however, we allow everything to cool; in cooling the plate must shrink. The model, however, prevents this from following its intent, for the teeth being arranged in an arch, the arch cannot be made to contract, and therefore it must be that the heels of the horseshoe plate approach each other in shrinking, the result being that the plate leaves the sides of the model at the heel. Dentists have long ago discovered this fact, that after making a plate it does not touch the roof of the mouth at the heel, and as a remedy have scraped the model at that point; this, because, whilst they noted the fact, they did not have sufficient love of the truth and desire for real knowledge to seek the cause; they have been satisfied to get out of the scrape as best they could, and being in a scrape they have scraped their way out. Now, thanks to Dr. Southwick, this point is cleared up; and the beauty of it is that he not only said the thing: he also proved it. He placed the plate on the model, and once more showing the discrepancy at the heel he said, "If I am right in saying that this plate fitted this model at 320° and has shrunk away in cooling, it follows that if I once more heat the plate up to that point it should fit again." Holding the plate and model over a spirit flame, he slowly heated it with the result that in a few moments plate and cast were snugly together. Now for the remedy. In flasking a piece he bevels his model and slightly soaps it, thus making it easy to remove from the investment after vulcanizing. After so removing a case on the model and carefully separating the plate from the cast, he again places it on, heats it up as above described, and then during the process of cooling holds the heel of plate in close contact with the model, the result being now that the contraction simply raises the plate from the model at the center, thus forming a good air chamber.

The Odontological postponed its May meeting till the middle

of the month, so that members might attend the state convention. Dr. Sudduth read a paper on dental education, which was excellent and well timed, the main feature being his advocacy of more thorough training for men in the schools. (As I write that last phrase it occurs to me that it sounds ambiguous and may leave a doubt as to whether by "men in the schools" is meant the students or their teachers. Still, I think Dr. Sudduth will forgive me if I leave it as it is, doubt and all.) He also strongly advocated a three-years' term. The paper brought out little discussion, Dr. Abbott, or I should say Prof. Abbott, being the only one who spoke. He, however, gave us a very valuable piece of information, which made us all, as New Yorkers, feel particularly proud. He told us that "The New York college is the best dental school in the world!!" Isn't that nice. Did you know it in the west before? We did not here in the east; but what is that about a prophet counting for little in his own country?

There was a little occurrence at this meeting I really must tell you about. Dr. O. E. Hill, of Brooklyn (By the way, I should tell you that there are a number of Brooklyn men in the New York Odontological, for the society, you know, only admits to membership men who are the cream of the profession, and as there is not enough cream in New York, they get a little from Brooklyn and a little from Jersey; the Jersey cow, remember, gives rich milk and the best cream, so the New York article must absorb some of the richness.) brought a patient to the meeting and asked the opinion and advice of the members as to the cause of the trouble present. The peculiar features of the case were these: the patient, a man about 35 years of age, had consulted Dr. Hill six months ago, having, however, previously visited another dentist who had plunged a lancet into the gum over the superior right central incisor. At the time that Dr. Hill first saw it, the tooth was loose, elongated and tipped in so as to be disturbed by the lower teeth in closing the mouth. The patient was suffering and the doctor applied a dressing to relieve him, which acted so felicitously that the patient did not return and was not seen again until just before the doctor was about to start for New York to attend the Odontological meeting, and so was brought over.

At this time the tooth was loose, slightly elevated from its socket, and tipped in. It was this tipping in that seemed singular, for the lower teeth bit up under so close that there seemed every reason for its tipping out. By this time also the left central and both laterals appeared involved, pus exuding when pressure was applied around the necks of the teeth. Various views were expressed, the most general being that the trouble, pus, looseness, (and tipping in?) had been caused by the occlusion. In the midst of the presentment of the case as an incident of office practice, Prof. Abbott entered and was at once invited to examine and diagnose the case. After a few minutes spent in examination of the mouth, and conversation with Dr. Hill, the professor expressed his views in these words: "It is a case of Pyorrhea Alveolaris, and if the doctor will probe he will find the *tartar*." "*The tartar!* with the accent on the *the*," as the song says. Are not the younger men present entitled to form the opinion that the professor endorsed the idea that Pyorrhea is always caused by tartar? Of course I know that the professor knows better than that, but as a professor surely he should weigh words better than that. But hear the sequel. To-night at a meeting of the First District Dental Society, under the caption, "Incidents of Office Practice," Dr. Atkinson spoke of this very case. He mentioned no names; but it was not difficult to recognize the identity of the patient when he spoke of him as a gold-beater, and referred to him as having been presented at a previous meeting. It seems that after the Odontological meeting the patient was taken to Dr. Atkinson for advice. He found two fistulæ, one over each central. This of course had been noticed, but by syringing peroxide of hydrogen through one it was easy to demonstrate that they were connected. To be brief, he called it Traumatic Alveolar abscess, and whilst he refused to assert a cause, expressed the opinion that a blow from the hammer of the gold-beater had begun the trouble. He further claimed that the pulp was dead, and recommended treatment suitable to the conditions described. It should be said that Dr. Hill claims that when he first saw the case the tooth was not dead; at Dr. Atkinson's suggestion he drilled through the palatal portion of the tooth and removed the dead pulp. The patient, however, the next day visited Dr. Hill, bringing the tooth with him, having taken the management of

affairs into his own hands and called at a dental laboratory (I cannot say office, for such a man must be more of a mechanic than a dentist), and had the tooth extracted. Under these circumstances it will be seen that the probe was not necessary to demonstrate the absence of *the* tartar, nor would the appearance of the tooth suggest tartar. A good point to relate here is this: After the tooth had been extracted it was taken to Dr. Atkinson, and he was asked to express an opinion as to what disease, if any, had been the cause of the loss of the tooth. He did not suspect the identity of the tooth, but at once said: "There is evidence here of retrogressive metamorphosis, and I should think an abscess had been present." Thus he showed the correctness of his diagnosis, and the mistake of the pyorrhœa theory. I relate this not to be critical of Dr. Abbott's ability, but to demonstrate that even the best of us can be mistaken, and to point the moral of modesty in giving expression publicly or privately to opinions which are perhaps, after all, but opinions.

At the meeting of the First District society to-night there was no paper read; but Dr. Carr, who was loudly applauded as he was introduced, explained fully the points of our new law, answering all questions relating thereto that the members wished to ask.

I would like to say something of the clinics held this afternoon, but this letter is already longer than I intended it to be; and moreover, as the meetings of the societies cease now for the summer I will leave that topic for my next communication. I shall also then give you an account of the meeting of the Second District Society, to be held soon at Newburgh. Yours truly,

ODONTO BLAST.

LETTER FROM NEW YORK.—EPITHELIAL TUMOR.—CAPPING TEETH.

To the Editor of the Dental Review:

Dear Sir:—I recently saw a very interesting surgical case treated by Dr. W. H. Atkinson. As it is of great importance to the profession, I send an account for the REVIEW.

It is rarely that epithelial growths of such unusual aspect are presented, but they are induced in too many cases by ill-fitting

plates or expansive air chambers, and are more common than is generally believed, so that the details of the successful removal of an epithelioma, and restoration of the parts to healthy condition, will enable us to recognize and remedy the evil. More cases of this lesion are observed where the patient has passed middle age and enjoyed uniform good health. This was the case with Mrs. G.

She had worn complete sets of continuous gum, most of the time for thirty years; while on the coast of California the parts became uneasy and she was induced to have a rubber plate, which she wore a short time, but as it aggravated the difficulty, she came East and had duplicate sets of continuous gum work inserted. These she continued to wear during the day after the treatment, and they will soon be replaced by sets having no air chamber other than to relieve the impression so the plate will not ride on the hard ridge of the roof of the mouth.

The epithelial tumor of tomato-like appearance, located in the vault of the roof of the mouth, completely obliterated the unnecessarily large air chamber in the plate. It extended forward, and laterally, to the permanent alveolar border, and was divided into three lobes. Thickened gum tissue continued up the pendulum palati, the growth being deepest in the highest portion of the vault and extended to the union of the hard and soft palate. The removal was accomplished by treating with a saturated solution of salicylic acid in alcohol. The parts were dried with bibulous paper and the acid applied on a pledget of cotton, which caused the tumor to slough, or cooked it, as the doctor said. After the sloughing a paste of tannic acid and glycerine was applied. This treatment was repeated every four days. During all the time a vigorous constitutional tonic treatment has been kept up. As a digestive, the following prescription was given: One powder after each meal.

R Papoid,	-	-	-	℞ xxx.
Lac, malted,	-	-	-	"
Saccharin,	-	-	-	gr. 72
M Ft pulv.	36.			

Also sulph. cinchonidia, 2 gr., morning and evening.

R Phosphori,	-	-	gr. 1-50
Pulv. nucis vomicæ,	-	-	gr. 1
Concent. tinct. canthar.,	-	-	min. 1

One pill every evening.

Another interesting case of surgery performed by Dr. Atkinson, which introduces original methods applicable to many cases of loose teeth, was that of B. C. Burt, a cornetist in Gilmore's band. While playing cricket he received a blow which fractured the left superior lateral at the neck, leaving it hanging by the pulp. The left central was forced into the mouth, carrying with it the inner alveolar plate. The patient did not see the doctor until the seventh day after the accident, when the teeth were ligated with silk firmly to place. Antiphlogistic treatment was employed. Great firmness of the teeth is necessary in order to give the pressure required in blowing this class of instruments.

In order to give permanent support to this tooth and to the broken teeth, a channel was made in the cutting edge of the six superior teeth. A bar of "clasp timber"—platinum and gold—gauge 24, was wrapped with gold foil No. 120 and imbedded in the channel, making a continuous ridge or gold filling joining all the teeth at the cutting edge. Fortunately the fractures united and the colored infiltrations entirely disappeared, restoring the teeth to their normal color and usefulness. The treatment for the restoration occupied six days, when the patient resumed his duties in the band. This plan of capping the teeth is of great benefit in many cases where they are loose from pyorrhœa alveolaris.

Yours truly,

C. S. W. BALDWIN, D. D. S.

ELECTRICITY IN EXTRACTING.—A LAUGHABLE EXPERIENCE.

In the year 1862 Capt. F. returned home on a furlough from the army, and on his way passed through Washington. He came to my office to have a large molar extracted. He said, "Do you use electricity in extracting teeth? It is a big thing around Washington." I answered in the affirmative and showed him my battery and the appliances, and he sat down in the operating chair with great satisfaction. My assistant being out for the moment, I asked my wife, who was present, if she would assist me by pushing the plunger in the battery when I gave the signal "now." She being very timid about seeing operations of the kind, at first refused but finally consented.

The forceps was placed on the tooth and the signal "now"

was given for the current to be sent through the electrodes, and I lifted out the tooth. The captain clapped his hands together and said, "By George, that is glorious; it didn't hurt a bit; it's a big thing! Capital! Capital!" Just then I turned around and got a glimpse of my wife, who stood as pale as death, with a finger in each ear. She had not heard the signal "now" and consequently there was no circuit of electricity made, but it was all the same to the captain, who *thought* he was not hurt, and so, according to a modern doctrine, *was not hurt*; but I assure you, Mr. Editor, the extracting of such teeth as the Captain's, does hurt—some people.

R. S. WELLS.

Chicago, Ill.

FOREIGN CORRESPONDENCE.

THE POST-GRADUATE COURSE AT THE NATIONAL DENTAL HOSPITAL, LONDON.

To the Editor of the Dental Review:

DEAR SIR:—The post-graduate course at the National Dental Hospital was inaugurated on June 2d by Dr. Cunningham, of Cambridge, who lectured to a class of about twenty, on "Immediate Root Filling." This he did in a very comprehensive manner, making his lecture very interesting by explaining the most complete table of statistics and sketches of comparative operations I have ever seen, speaking, as they did, volumes for his painstaking care in preparing data whereon to base his remarks.

To present the subject briefly, Dr. Cunningham presented a tabulated report of several hundreds of cases of devitalized teeth, from those in a negative condition, *i. e.*, as regards functional disturbance, to those in a retrograde suppurative condition that had been treated and filled at one sitting; as these cover over eighty per cent. of his late cases of treatment, the method employed may prove interesting. His first proposition is: the operation is more of a surgical than a medical one. In this I can almost entirely concur, believing, with the lecturer, in the free though careful use of the pulp drill, thereby removing to quite an extent, dentine, that may be disorganized or impregnated with matter, whose influence is detrimental to the surrounding tissues,

and at the same time enabling the operator to secure more effectual results from any medicinal agents than is possible where only a broach is used. I think there is no greater risk in using a drill in a canal whose course has first been determined by a probe, than in the use of a barbed pulp extractor, and in careful hands this factor is hardly worth considering, for the dentist who cannot carefully and thoroughly manipulate a pulp broach should seek some other calling for the benefit of his own reputation, and the best interests of his patients. In Dr. Cunningham's first attempts in this line of treatment he used an infinitesimal amount of arsenic on cotton to seal the end of the canal, in the belief that its action being so good in preserving dead issues, the small amount used would prevent any further retrograde metamorphosis of any possible remaining contents of the canal; while having no bad results from the arsenic, as many would suppose, he has long since discontinued this method.

Mention was made in the lecture of adverse criticism in some transatlantic journals, owing to an imperfect understanding of his propositions or from disconnected ideas of those who had heard his paper upon the subject; he thought the expressions would be materially modified if based upon positive instead of suppositious data. Dr. Cunningham attaches great importance to the necessity of cleansing the pulp canal as thoroughly as possible, and if its contents have been of a moist nature, washing with alcohol or chloroform used with the Elliott syringe. This, of course, is a line of practice that has long been recognized as essential to the successful treatment of devitalized teeth. The lecturer advocated the now recognized peroxide of hydrogen and mercurous chloride solution for sterilizing and nullifying the conditions where pus is present, and after drying the root fairly well, fills with oxychloride of zinc on cotton. The claim was advanced that if the canal was moist the introduction of the root filling could be better accomplished—a statement I am not prepared to endorse—he then would not hesitate to complete the operation with any filling indicated; when he first commenced this treatment he usually waited about a year before filling permanently; he now finds that unnecessary. The lecturer cited the experience of Dr. Hesse, of Germany, who had practiced this method since 1883 with very gratifying results, and while not laying

down dogmatic lines of procedure, felt justified from his own experience to recommend the subject for the consideration of any one who desired to simplify a very frequent and necessary operation.

I think to quite an extent this method of root filling has been practiced by the advanced corps of our profession, though possibly to not as great an extent as it might have been. Yet, on the other hand, I am certain the functional integrity of many teeth is very often jeopardized by over-treatment. Notwithstanding the favorable array of statistics on the side of "immediate root filling," I think that so long as the human system is subject to so many modifying influences, lesions of the pulp, peridental tissues and adjacent structures should be treated as their individual requirements indicate.

Should we find in this method a time and labor-saving means to an end, the intelligent investigator will soon know in what cases to apply it, and we have made another step in advance.

Dr. Elliott, in his lecture upon "Gold Crowns," gave a very interesting exposé of the various practical methods of this important part of our practice; he dealt with the minutiae of the operation in his usual careful manner, and interested the class very much with a clinic, thereby practically demonstrating his remarks.

In connection with this I would say, at the last meeting of the Odontological Society of Great Britain, Dr. Elliott explained a simple and effective method of utilizing the principle of the "capsicum bag" for promoting counter-irritation. His method was to soak wash leather in tincture of capsicum, dry thoroughly, then moisten with a ten per cent. solution of tincture of cantharides; when dry, stick with flour paste to a piece of flannel, cut to suit requirements with shears or wad cutter. His method costs about one-tenth the price of capsicum bags. Dr. Elliott did not mention whether the wash leather should be first washed thoroughly to eliminate as much as possible the result of dressing preparations, but I suppose he does so.

"78."

LONDON, ENGLAND.


REVIEWS AND ABSTRACTS.

DAS FULLEN DER ZAHNE BEI INTACTER PULPA, mit Besonderer Berücksichtigung der Verwendung von Cohäsiver Goldfolie. (The filling of teeth in which the pulp is intact, with special reference to the use of cohesive gold foil.) By Ludwig Warnekros, dentist, in Berlin. One hundred and fifty illustrations. Berlin: 1888. C. Ash & Sons.

As all publications bearing the imprint of "Ash," so this one leaves no room for criticism when viewed from the typographical and artistic standpoint.

The author has written sufficient to make 107 pages octavo, and therein has endeavored to teach the method of filling all classes of cavities with all the materials generally employed for that purpose; but he invites the attention of the reader principally to the use of cohesive gold foil.

The illustrations used in demonstrating the manner of introducing the gold are exceptionally large. A molar, for instance, measures one inch and a half across the masticating surface from the anterior to the posterior approximal border, and a central incisor is almost of that length from the gingival margin to the cutting edge. In many of these illustrations the gold foil is represented in gilt, giving them an artistic effect. A careful review of the text reveals but little to which objection can be made, and a great deal which can be read with interest and profit by almost any student or practitioner. One chapter treats briefly of caries, filling materials, exclusion of moisture from cavities, and the examination of the teeth, all of which teaching is mainly correct. The preparation of crown cavities of molars and of simple approximal cavities of the molars and bicuspid, as advocated, is, we think, open to criticism, because if followed as recommended it must frequently lead to failure. The anchorage made in the way recommended would not invariably retain a filling, a matter which can be confidently expected, of fissure fillings of molar teeth. The cavity, as recommended, should be undercut at the posterior and external terminals of the cross. The anterior and internal terminals are recommended to be cut sloping in such a way that the cross section of the cavity looks something like this:

a  *b*. At *a*, it seems, the undercut is sufficient, but at *b* the

slope is such that in mastication the filling would be liable to displacement if a hard substance pressed upon the gold above and a little in front of *a*. This could not possibly be the case if the cavity were shaped thus: /____\ . Evidently the recommendation of the writer is placed on the maxim, expressed on page 30, that undercuts should be made, as a rule, only when in direct line with the vision of the operator. While this is a good point to keep in mind, it is nevertheless true that undercuts must often, very often, be made out of the direct line of vision, and that these positions must be filled by the aid of reflectors and properly curved pluggers.

Perhaps no one would rejoice more than the reviewer if approximal cavities (when the pulp is intact) only decayed as far toward the gum as shown by illustrations in the chapter on approximal fillings (pages 44, 45, 47, and 50); but, alas, in the majority of cases, a matrix, as illustrated in use, would be totally worthless. This chapter is inadequate, because it fails to teach the filling of these cavities, for which *properly adjusted* matrices are almost indispensable.

The general method pursued in the work is to describe the cavity, its preparation, and then the method of filling with gold, amalgam, etc. In describing how to fill the approximal cavities of incisors the author only teaches how to use gold and the cements, saying nothing of amalgam,—thus rightly, though silently, teaching that amalgam is not to be used. In speaking of the cavities found on the lingual surfaces of the lateral incisor the same practice would have been proper to recommend; but instead of so doing the author teaches the use of gold and of amalgam in these positions, when in practice amalgam should never be used in these cavities, because in time they *do* discolor the tooth substance.

In the last chapter devoted to the filling of cavities at the cervical margin of teeth the author makes an error (page 105) which can not be corrected too soon, and the practice recommended should be abandoned by him—as well as by others who may make use of it—immediately. It is recommended that in those cases of caries in these positions where it is so difficult to keep the rubber-dam or gum-tissue out of the way, a hole should be drilled above the cavity. Into this a thread is cut and a screw

set. This will hold the ligature beyond the cavity. When the latter is filled the screw is removed, and the hole made by it is also filled. No comment is necessary. We recommend the use and study of matrices, of which a half dozen or more, intended for this special purpose, are now before the profession.

UEBER BISSARTEN UND BISSANOMALIEN. (Characteristics and Anomalies of the "Bite.") A study by Alfred Sternfeld, M. D., Munich, Germany. Munich, 1888: Knorr & Hirth. Sixty-five 8vo pages and 14 plates, containing 92 illustrations.

After reviewing the literature on the subject, the author cites cases of variations from the normal "bite" and the method of correcting them. The illustrations indicate appliances used for particular classes of this nature of irregularity. The matter is well written and arranged, and the book may be read with profit by dentists.

PAMPHLETS RECEIVED.

De Bow & Freeman, of Albion, Mich., have published an improved dental ledger, and a bill-head which is similar to one page of the ledger. The operations are recorded on a chart, having thirty-two spaces, one space for each tooth, lettered from A to H, upper and lower, right and left. Each tooth is divided into five parts, numbered from 1 to 5, and the operations are recorded by reference to the letter and number on the chart.

An Improved Sphygmograph and Its Work. By H. R. Hopkins, M. D., Buffalo. Reprinted from "The Medical Press of Western New York."

The Relations of Mind and Body. By H. R. Hopkins, M. D., Buffalo.

DENTAL COLLEGE COMMENCEMENTS.

HARVARD UNIVERSITY.—DENTAL DEPARTMENT.

At the commencement exercises the president of the University, C. W. Eliot, LL.D., conferred the Degree of Doctor of Dental Medicine on the following named (six) persons:

George Pierce Geist,
Frederick Payne Graves,
Ellis Proctor Holmes.

| Henry Allen Kelly,
| Thomas George Read, L. D.S.,
| Frederick Arnold Stevenson.

UNIVERSITY OF MICHIGAN.—DENTAL DEPARTMENT,

At the annual commencement exercises of Michigan University, held at Ann Arbor, Mich., on Thursday, June 28th, the degree of Doctor of Dental Surgery was conferred on the following named (37) persons:

Horace Albert Benson.
 Clarence Walker Berry.
 William Townsend Binzley.
 Harriette Parkes Brierley.
 Elwyn Butts.
 Rollin Edward Drake.
 William Fraser Dunlop.
 Frank Howard Essig.
 William Burton Flynn.
 Sherman M. Fowler.
 Jeronimo Jill Garcia, B. S.
 Arthur Newton Hart.
 Elmer Bertrand Hause.
 Oliver Wendell Huff.
 Egbert Theodore Loeffler, B. S.
 Otto Marx.
 Thomas Stuart Maxwell.
 Charles Edward Meerhoff.
 Richard Edward Moll.

Irvin Myers.
 Rudolph Paul Nagle.
 Harry Cox Nickels.
 Charles Walter Nutting.
 Homer Ellsworth Parshall.
 William Orlando Randall.
 Henry Charles Raymond.
 Theckla Stein Reuter.
 Henry William Riser.
 Martha Josephine Robinson.
 Henry Martin Seybold.
 Michael Cornelius Sheehan.
 Lucius Chipman Smith.
 Sherman M. Stauffer.
 Martin Dogener Vandenberg.
 Alfred Frederick Webster.
 William Holt Woodburn.
 Walter Thomas Wright.

BOSTON DENTAL COLLEGE.

The twenty-first annual commencement exercises of the Boston Dental College were held at Parker Memorial Hall, Boston, Mass., on Wednesday evening, June 20th, 1888. The address to the graduates was delivered by the Rev. Charles A. Dickinson, and the valedictory address by Theodore G. Huntington, D.D.S. The number of matriculates was 68, and on the following named nineteen persons the degree of Doctor of Dental Surgery was conferred by I. J. Wetherbee, D.D.S., the president of the College :

Charles Herbert Allen, Massachusetts.
 John Stanhope Engs, Rhode Island.
 Alfred Armand Frost, Massachusetts.
 F. M. Hemenway, Massachusetts.
 Edward. C. Hinckley, Massachusetts.
 Charles E. H. Higgins, Massachusetts.
 T. G. Huntington, Massachusetts.
 Frank Adams Knowlton, Maine.
 Edward Hayward Lincoln, Maine.
 Francis De Sales Magee, Maine.

Thomas P. Morey, Colombo, Ceylon.
 Michael J. O'Connor, Massachusetts.
 John William Patch, Massachusetts.
 Fred Prosper Piper, Massachusetts.
 Lewis O. Pollard, New Hampshire.
 William Rice, Massachusetts.
 Arthur Edward Snow, Massachusetts.
 B. B. Stoddard, Massachusetts.
 Herbert H. Warren, Massachusetts.

DR. E. B. GARDETTE, one of the pioneer dentists of Philadelphia, died June 17, aged eighty-five. He was a graduate of, and president of, the Jefferson Medical College at the time of his decease. He was a contributor to the periodicals published between 1840 and 1855, among his contributions being one on "Transplanting Teeth." To the younger generation of dentists he was unknown; but in his time he was not only an ornament to his profession but an aggressive practitioner, whose aim ever was to uphold the dignity of his profession. It was a matter of no concern to him whether he was "recognized" or not, as he strictly held his ground by merit and uncommon good sense. The number of such ornaments of the profession is gradually lessening, year by year.

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WHY IS IT THUS?

TO THE EDITOR OF THE DENTAL REVIEW:

Dear Sir:—Why is it we are not favored now with articles on the branch of mechanical dentistry? Can it be the interest, once shown in this direction has died, or even is dying out?

Some of our professional brethren may say mechanical dentistry is something of the past, or is dirty work, or, maybe, it is work we are not called to perform on account of a higher standing of the profession; that is, we are doing more for the salvation of natural teeth. These things may all be true to a certain extent, but can we, as a profession, afford to drop out one of our specialties? for thus you may call it. Is it not as much a specialty to dentistry as an aurist or oculist is to medicine? Our calling is not made up of as many divisions or specialties as our sister profession, medicine, that we can even afford to drop off one of the main props, simply because it may not seem to be as professional as operating. Remember, my younger readers, there were then men in our profession before our day who could, and would, be shining lights to-day to give us information that might put some of us to shame, and they could also with a manly and professional air appear at both places, at the chair and in the laboratory. Were they not as much respected in their day as some of our best dentists of to-day? Then again, we are not all so situated as to enjoy a city practice, where specialists are more wont to be found. We cannot all enjoy the privileges of a city as New York or Chicago. We cannot all be Marshall Webbs, and enjoy a world-wide reputation in that direction. Who is there that can say they have not enjoyed the articles that have appeared from time to time in our dental journals from the pen of our beloved teacher, Dr. L. P. Haskell? This is a subject that will bear some thought and investigation, and we should be pleased to hear from gentlemen who are gifted in this branch of our profession.

J. E. CUMMINGS, D.D.S., M.D.S.

Syracuse, N. Y.

MEMORANDA.

DR. C. P. FITCH, ex-president of the American Dental Association, is deceased.

NEW JERSEY State Dental Society will meet Wednesday, July 18, at Asbury Park.

CALIFORNIA STATE DENTAL ASSOCIATION.—Meets in San Francisco, Cal., July 17, 1888.

SOUTH CAROLINA STATE DENTAL ASSOCIATION.—Meets at Greenville, S. C., July 24, 1888.

DR. WILL H. WHITSLAR, of Youngstown, Ohio, was married Wednesday, June 27, 1888.

MAINE DENTAL SOCIETY.—Meets in twenty-third annual session at Portland, Me., July 17 and 18, 1888.

FROM experiments we have recently seen, it appears that the oil of Cassia is an important and valuable germicide.

CASH paid for old works on dentistry. Address J. W. Wassall, 208 Dearborn avenue, giving title and date of publication.

THE non-independent dental journals are called—well they have been called—monthly catalogues, or something o' the sort!

GEORGIA STATE DENTAL SOCIETY AND EAST TENNESSEE DENTAL ASSOCIATION.—Meet jointly at Dalton, Ga., August 22 to 25, 1888.

DRS. BOWMAN WEEKS and JENISON have removed their dental offices to the Best & Kenyon block, 608½ Nicollet ave., Minneapolis, Minn.

DR. C. H. THAYER has returned to Chicago, after a year's absence in Europe for the benefit of his health. He will shortly reopen an office in the city.

THE Kentucky State Dental Association declined to allow a clinic to be given by the use of a *secret* local anæsthetic at the recent annual meeting. Next.

DR. C. E. KELLY's paper on "Dental Electrics," which first appeared in the DENTAL REVIEW, has been awarded the honor of republication four times already.

THE Wisconsin State Dental Society's programme is very handsomely executed. We hope it will prove a drawing card and bring out a large attendance July 17.

DR. WILHEM HERBST and Prof. Fr. Hesse will conduct a post-graduate course for dentists, at the University of Leipzig, commencing July 16, and ending August 11.

"CHR. BURKI, dealer in hogs at Steffisburg, Switzerland, recommends himself for the extraction of teeth," thus reads an advertisement in a Swiss newspaper. —*Zahn Wochenbl.*

GOV. OGLESBY appointed Dr. C. Stoddard Smith, of Chicago, a member of the State Board of Dental Examiners to succeed Dr. G. V. Black, of Jacksonville, whose term has expired.

DRS. B. H. TEAGUE, Aiken, S. C. W. Taft, Cincinnati, W. F. Morrill, New Albany, and E. Pittwood, Spokane Falls, Washington Territory, were in Chicago during the month of June.

ERRATUM: In Dr. Rhein's report in the June issue the cuts were misplaced by the printer's blunder. The cuts should be transposed but the *explanations should remain*, when it will read as intended.

The *Journal of the American Medical Association* has been enlarged to thirty-six pages, weekly, making it one of the largest and cleanest journals in the country. We congratulate the *Journal* on its prosperity and good looks.

THE new editor of the *Independent Practitioner* in his salutatory says that none but dentists in actual practice will be allowed to subscribe for, or own stock in the new syndicate. His name is in the list of stockholders!

THE Virginia State Dental Association will meet in Staunton, Wednesday, August 22, 1888. Dr. W. W. H. Thackston is president, and under his direction a complete programme has been issued. All dentists will be cordially welcomed.

GUAIACOL is the way it is spelled. Lehn & Fink, New York, will supply it. A rope of cotton was placed in a pulpless tooth, the cavity sealed for forty days, and the odor was distinct on removal of the cotton. Antiseptic and disinfectant.

A VULCANIZER exploded at the Chicago College of Dental Surgery. Fortunately no one was injured. A double-boarded partition was ripped open, a piece of the vulcanizer tore a six-inch hole in the ceiling, and other slight damage was done.

OFFICERS of the Iowa State Dental Society for 1888: President, J. B. Monfort; vice-president, L. K. Fullerton; secretary, G. W. Miller; treasurer, F. M. Shriver; executive committee, F. R. Ross, Jessie M. Ritchey and C. Thomas. Next place of meeting, Des Moines.

THE sixty-first annual meeting of the German Association of Naturalists and Physicians will meet at Cologne, September 18 to 23, 1888. Section 26 is devoted to dentistry, and Dr. Baumeister, of Cologne, is chairman; C. Kellner (Helenstrasse No 3) Cologne, is the secretary.

OFFICERS of Indiana State Dental Association: President, Dr. J. B. Morrison, Indianapolis; 1st vice-president, Dr. T. A. Goodwin, Warsaw; 2d vice-president, Dr. C. A. Budd, Muncie; treasurer, Dr. Merritt Wells, Indianapolis; secretary, R. W. Van Valzah, Terre Haute; trustee, E. V. Burt, La Fayette.

A CHICAGO bank teller recently begged leave of absence from the officers of the bank, under the plea that he had the toothache, and wanted to see a dentist. After his departure it transpired that the teller's preferences were for Canadian dentists; at any rate, he carried enough money with him to make the dentist independently rich.

THE following named persons were elected honorary members of the Frankfurt Dental society: Dr. Klare, Leipzig, Germany; Prof. Sauer, Berlin, Germany. Corresponding members: M. Geissler, Chemnitz, Germany; M. Jul. Parreidt, Leipzig, Germany; Dr. F. H. Rehwinkel, Chillicothe, Ohio; M. Schneider, Erlangen, Germany; Dr. Steinberger, Vienna, Austria; Dr. Zsigmondy, Vienna Austria.

A SHORT time ago, in examining teeth for a gentleman, we found a large filling loose in a pulpless molar tooth. The tooth had broken away posterior to the filling. The filling was removed, the cavity deepened and properly excavated, and thin oxyphosphate flowed into it, the filling being replaced and the broken portion of the tooth contoured with the oxyphosphate. For a temporary make-shift, we think this was the proper thing to do.

OFFICERS of the Kentucky State Dental Association: President, Dr. J. H. Baldwin, Louisville; vice-president, Dr. H. B. Tileston, Louisville; secretary, Dr. C. E. Dunn, Louisville; treasurer, Dr. J. F. Canine, Louisville; board of censors, Dr. L. A. King, Henderson; Dr. W. E. Baxter, Frankfort; executive committee, Dr. W. P. McQuown, Georgetown; state board of examiners, Dr. C. V. Rosser, Elizabethtown; Dr. W. Van Antwerp, Mt. Sterling.

EASTERN IOWA DENTAL SOCIETY.—The first meeting was held in the office of Dr. J. W. Caldwell, of Marion, June 25, 1888. The following officers were elected for the ensuing year: President, Dr. Gustavus, North Springville; vice-

president, Dr. F. R. Ross, Cedar Rapids; secretary, Dr. J. W. Caldwell, Marion; treasurer, Dr. W. G. Clark, Cedar Rapids. Next meeting to be held Sept. 10, 1888, in Cedar Rapids.

J. W. CALDWELL, Sec'y.

TO THE EDITOR OF THE DENTAL REVIEW:

Dear Sir:—A good method of repairing worn-out disk mandrels is to place the screw flat upon a small anvil and strike it a light blow with a hammer, so as to flatten it slightly, when the screw will once more hold as perfectly as before. Another point which will be well to observe, with *new* as well as old mandrels, is to countersink the screw hole in the mandrel, as the screw is always imperfectly cut near the head.

Respectfully, W. G. STOWELL.

THE CRUEL DENTIST.—Mistress—Well, Bridget, did you see the dentist?

Biddy O'Galway—Yis, ma'am.

Mistress—Did he pull your tooth?

Biddy O'Galway—Sore, ma'am, he didn't lay a han' to it to pull at all. He scooped it out with a wee hoe, an' thin he druv it in to stay foriver—wid a plug on the top o' it to kape it tight. I'll niver be caught doin' the likes ag'in, ma'am. Vhat with his upsettin' the sate he put me in, an' tyin' a dirty bit av an old gum shoe in me mouth fer a bib, an' makin' a noise, the size o' a coffee mill in my head, I'd laver walk the flure an' scrame.—*Puck*.

THE Secretary of one of the sections of the American Dental Association writes: "At a recent dental meeting I attended, the Northern Ohio Dental Association, our worthy Vice-President of the A. D. A. in discussing how dental societies should be conducted, said, that with the A. D. A. the section system was a failure, because the Chairman of the section unfolded his own views to the association, and that these views were not the sentiment of the entire section, or words to that effect. It is unnecessary for me to say that I put myself on record in this instance, for I do not believe that such is the case. I cited my own experience in receiving replies from the members of the section requesting papers as stated to you, and, drawing conclusions, I said it was the fault of *each* individual composing the section, because they let all the work fall upon the Chairman, and he did the best he could."

DR. W. C. LEE. I have practiced medicine in Australia for several years and I think it can be truthfully said that the profession there maintains a higher dignity than it does in America. With the exception of a few American doctors located there, the medical fraternity is composed of Englishmen. Every physician must show a diploma from a reputable medical college, and also be registered according to the law, before he is permitted to practice. A physician from America must show a diploma from a college that is governed under a law as rigid as the one in Illinois, as that State is considered in Australia to have the best law regulating medical colleges. A city physician in Australia always has a full livery and a cabman, and if too poor to own such a turn-out, he then rents one. Of course, the country physician in a few places must of necessity ride on horse back. Another thing, a physician never hangs out a sign, but simply places on his office door a brass plate on which is the name "Dr. —." If a physician in that country should swing a shingle to the caresses of the breezes like they do here, it would be considered a vulgar breach of professional etiquette not to be tolerated, his name would be stricken from the register and he would be compelled to forego

the practice of medicine if he did not conform to the simple style of a brass plate. A shingle would be considered to bring the doctor's office down to the level of a Cheap John store with its ostentatious sign. It is also a rare thing to see a doctor chew tobacco in that country. There are a great many smokers, but they are never seen smoking in their offices or on the street. I should judge, too, that physicians are not as numerous there as they are here. In the city of Melbourne and the province of Victoria, including a population of 580,000, there are only 181 doctors. And owing to the rigid laws, that country is also remarkably free from the traveling quacks that infest America and thrive in their nefarious business by preying upon the credulities of the people.—*St. Louis daily paper.*

WHILE there is yet room for dentists, and even dental colleges, it should not be forgotten that if any of the latter are established they should be schools of the first order. We ought to be in a position to be benefited by the experience of medicine in this particular. It is evident that in the United States the proportion of medical practitioners is too great to insure the general success of the members of that profession. Appropriate action tending to remedy the evil of the multiplication of medical schools was taken at the recent meeting of the American Medical association at Cincinnati; Dr. De Wolf, the commissioner of Health, of Chicago, says: "The number of physicians in Illinois in 1880 was 5,979; total number of new men to Feb. 10, 1886, 2,063; making a total of 8,042; total number in practice, 6,065; died, 344; left the State, 1,061; abandoned practice, 572; that is to say, over 7 per cent failed as physicians and sought other modes of obtaining a livelihood. There are from 1,500 to 2,000 too many physicians in Illinois, he said, who are not necessary and who are not making a good living."

TO THE JOINT MEETING.

DR. A. W. HARLAN.

Dear Sir:—The "Southern Passenger Association," which controls territory south of the Ohio and east of the Mississippi rivers, gives one and one-third fare for the round trip.

The "Central Traffic Association" makes the same rate.

The rate from both these associations is on the certificate plan; that is, delegates should purchase a regular ticket to Louisville, securing from the selling agent a certificate that they have purchased ticket by a stipulated route, which certificate, when endorsed by the Secretary of the Dental Association, and presented to the ticket agent of the road over which they arrived in Louisville, they will be sold a ticket to the point from which they started for one-third rate, thus making one and one third fare for the round trip.

The Chesapeake & Ohio railroad will sell tickets from Washington City, Richmond, Charlottesville, Staunton, Va., and all points on said line, at one fare for the round trip. Tickets will be on sale August 24, 25 and 26, good to return until September 10.

The "Texas Traffic association" says: "We have placed on sale on all lines in our association summer excursion tickets to Louisville at one and one-third fare, and suggest that delegates to your convention avail themselves of same. These tickets are good until Oct. 31.

The Trunk Line association has also fixed the rate of one and one-third fare on certificate plan.

Yours truly, CHAS. E. DUNN.

OFFICERS OF THE TENNESSEE STATE DENTAL ASSOCIATION.

President, A. G. White, Springfield; 1st vice-president, J. L. Mewborn, Memphis; 2d vice-president, W. B. Spencer, Jackson; recording secretary, P. D. Houston, Lewisburg; corresponding secretary, Gordon White, Nashville; treasurer, W. H. Morgan, Nashville. Jacksons elected as next place of meeting.

A WOMAN DENTIST.—It is said that the most successful dentist in London at present is a German Baroness, who is the cleverest tooth-extractor in England. That is her branch of the business, and a "dental surgeon" she calls herself, the other dentists sending their patients to her when extreme measures have to be taken. The female dentist is just beginning to appear over the professional horizon in this city, and I believe on the whole she is a success. A man I know lives in a boarding-house and tells me that a lone, unprotected female who sat opposite him at table greatly aroused his curiosity as to her occupation. She always started off bright and early after breakfast and never appeared until late dinner, but she never dropped the smallest hint of how she occupied the long hours between the two meals; she seemed to be successful at whatever she did, for she was always well dressed and seemed to have no anxieties of a sordid kind. He noticed many times how large and powerful her hands and wrists were, and puzzled himself greatly as to how she used them. She was always thoroughly up with all the news and gossip of the day, and was ready to talk with the utmost freedom on any such general topic; but the moment matters became in the smallest degree personal she promptly retired into her shell and pulled her shell in after her. Finally he happened in rather an out-of-the-way part of the town to see her name in gilt letters on the edge of the window, as the doctors put up theirs, only after it bore the letters D. D. S., and then he knew how to account for her powerful wrists and her reticence. He enlarged on the German Baroness at dinner that night, and she looked up quickly, laughed, and owned up. She confessed that her father had been a dentist, and from her childhood she had maintained the greatest interest in the subject so that her father taught her all he knew. After his death she went to Paris to study, and now has been two years working on such teeth in Gotham as are presented for her inspection. She said: "In the old heroic days of dentistry, when main force was used and anguish was the natural concomitant, women had neither the brawn nor the nerve for the work; but since the introduction of all sorts of machine apparatus, milder methods and cocaine have so ameliorated the profession it is one women are eminently capable of filling, as well as the teeth. There are four or five women dentists in New York and most of them are doing a good business. A great many women prefer to come to us, and we are, I believe, peculiarly successful with children, because we understand better how to manage them. I love my profession and take the greatest pride and pleasure in it, and, more than that, I am making money in it.—*Brooklyn Eagle*."

THE DENTAL REVIEW.

VOL. II.

CHICAGO, AUGUST 15, 1888.

No. 8.

ORIGINAL COMMUNICATIONS.

CRYSTAL GOLD FILLING.

BY M. SCHLENKER, ST. GALLEN, SWITZERLAND.

[Translated from the German.]

(Continued from page 385.)

The instruments employed up to the present time have too small a condensing surface, hence, naturally the time required to condense a filling is greater, the smaller the size of the instrument as compared with the size of the cavity. If the point of the plugger, for instance, is one-fourth the size of the cavity, it is necessary to exert pressure four times, in order to condense the entire surface; but if the surface of the plugger point is equal to the surface to be condensed, a single pressure will suffice and the labor is lessened three times in every four.

I have made the necessary instruments in a very simple manner. Taking an old excavator, a piece of German silver tube is soldered to it, and to this one after another is soldered until the proper size is attained. The condensing surface is filed even, and with a very fine steel file depressions are filed upon it at right angles, so that small serrations are the result. I have found these pluggers so convenient that I have requested M. Geo. Poulson, of Hamburg, to manufacture and supply them to the profession.

I had principally crown cavities in view, and hence had a set of four sizes manufactured, as shown in Fig. 5, numbers 1 to 4. The pluggers are made with heavy, file-cut handles, as these can be grasped and manipulated with more firmness. It is also better, that the extremity of the handle should be broad, its pressure

into the hollow of the hand is then not unpleasant, and it gives a large surface for the blow of the mallet.

In excavating the crown cavities of molars, it is seldom possible to do so in a straight line with the axis of the tooth, but generally in an obtuse angle of about 170 degrees, hence the pluggers are curved to that extent. For instance, in a molar, a crown cavity can be excavated by using a right angle instrument at a right angle with the axis of the tooth. The plugging can not be done in a straight line at all, unless a right angle plugger is used. But pluggers which are curved to that extent do not permit the use of as much force as instruments having an obtuse angle.

The condensing surface is cut sloping instead of being made level. Only when the surface is sloping does its entire extent come into use, while with a level surface, merely the posterior border can be used. The four pluggers are intended, principally, for crown cavities. They can be used, however, for other cavities also, and when used on approximal surfaces, the advantages of the sloping surface become apparent.

It seemed to be the opinion that crystal-gold pluggers should have blunt serrations. I have observed, however, that more gold can be introduced into a cavity, with a sharp than a blunt serrated plugger. I have

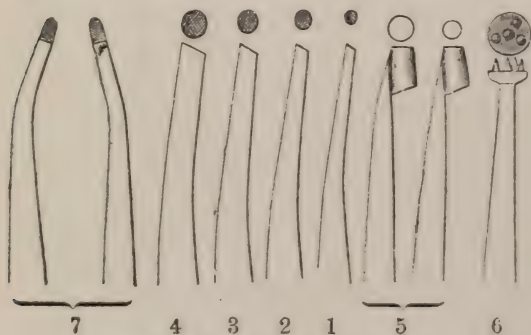


FIG. 5.—SCHLENKER'S PLUGGERS.

the serrations made, so that with the plugger, Nedden's crystal-gold can be readily picked up, this is an advantage, because it dispenses with the changing of instruments. These pluggers are also suitable for filling with gold

foil. A filling of gold foil, is more even than when fine pointed pluggers are used, the frequent inequalities or depressions are wanting.

For filling larger and irregular shaped cavities, the operator can make his own instruments in the manner stated. In this way

I made the instrument for the filling, I introduced in a lower molar at a clinic in Dresden (Dr. Claus, previously kindly sent me a cast of the tooth). This instrument exactly fitted the cavity, but could not be used, because I did not give it the proper angle. However, with an instrument having but one-fourth the size, which could have been used, I obtained results which were at once surprising and new.

If any one is cognizant what it means to introduce into a cavity nearly a book of gold, or a quantity equal to three-fourths of Watt's packages (for this is the amount of Nedden's gold used), he may have some knowledge of the advantages of these instruments and of the solidity of fillings made of this gold. I believe that many would doubt the statement, had not my confrères been eye-witnesses to the fact that this filling was introduced in fourteen minutes. The proper preparation of the gold with special reference to the cavity, greatly added to the rapidity of insertion; pieces of gold of the exact size of the cavity were cut from the cake, and for this purpose a cutter of German silver was made.

The burs used exactly correspond in size with the pluggers, so that when a cavity is prepared, the plugger exactly fits into it. If a cavity is not entirely destroyed by caries, it is slightly enlarged by removing part of the sound enamel, and the margin will be stronger. If fissures extend into the cavity it is best to enlarge it so as to include them. The filling of fissures is tedious and does not prevent the recurrence of decay as well as when they are included in a large crown cavity.

To correspond with the two larger pluggers, I had punches made (see Fig. 5, No. 5), these are a little smaller than either the burs or pluggers. The gold can be introduced readily, fills the cavity exactly, because in being pressed against the floor of the cavity, it spreads laterally, thus entirely filling all space. Any one can make these punches for himself. A German silver tube, or better still, one made of a watch spring is soldered to an old excavator, with silver solder, and when sharpened and polished, is ready for use. These can be made according to the size of the cavity. This was done in the case referred to, when I made a punch to correspond to the size of the plugger. The gold thus cut out is the exact size of the cavity, and much time is saved

when gold can be introduced in as large pieces as possible. For approximal cavities one of these punched pieces can be cut in two, or in any other desirable way.

I have requested M. Nedden's widow to prepare the gold in pellets to correspond with the size of my set of instruments, but as these could not readily be picked up with the plugger, I have invented a very simple instrument for this purpose (see Fig. 5, No. 6). Whoever wishes to make one of these for his own use can manufacture it in the following primitive manner: Take a small round disk of metal, with a plate pin punch, punch a hole in the center, and file an excavator to fit into it, and solder. For the purpose of taking up larger pellets of gold, make two or three smaller holes, put into them points of darning-needles and solder them and the excavator at one time to the metal disk. A quarter of an hour is sufficient to manufacture such an instrument.

Fig. 5, number 7, represents two flat pluggers, rights and lefts, these are intended principally for approximal cavities. When the approximal cavities of the anterior teeth, and the cavities of the bicuspid and molars, are not very large, the serrated surface of these pluggers, will cover the entire surface of the filling; this makes rapid and even filling possible, the gold can also be introduced with the plugger.

A very useful instrument is the hollow plugger, illustrated in Fig. 6. This instrument is especially useful in those cases where anchor pins are resorted to, and of which we will treat hereafter. Because the hollow

FIG. 6.
SCHLENKER'S
HOLLOW
PLUGGER.



FIG. 7.—SCHLENKER'S
HOLLOW PLUGGER,
in situ.

as is shown in Fig. 6, additional condensation with other instruments is necessary. This can generally be done in these cases where the cavities of necessity are very large. Any special size or shaped instrument may be ordered of Geo. Poulson, of Hamburg, or of other dental instrument makers. Such a hollow plugger can be made by any dentist himself. Take an old excavator, anneal it, and slightly bend the point, fit and solder to it a tube of German silver or one made of a watch spring. These tubes should first be fitted to the anchor pin. Solder to the tube a second, third, and so on until the size and shape corresponds with, and is suitable for, the cavity. It is a good plan to take an impression of the cavity with the anchor pin, and to make the instrument according to the plaster model to fit both. If the condensing surface is filed to a slope, and provided with serrations, it will prove perfectly satisfactory. Fillings made in this manner are beautiful, and a dropping out of the filling is impossible. Fig. 7 shows the instrument *in situ*.

For finishing the fillings, the corundum and rubber wheels and disks are suitable. They must be kept moistened during use. For polishing, rubber wheels should be used. When mixed with pumice they will leave a dead surface. I have made similar disks of copper-plate and soldered them to worn-out burs. These are especially useful for polishing the approximal surfaces of all the teeth. For use on V-shaped approximal surfaces, I have made disks of empty cartridge shells. With the circular saw the bottom of the shell is cut out, and with the plate-pin punch, a hole is cut in the center, and enlarged with a round file. It is then soldered to the shank with silver solder. For a thicker disk two of these are taken, holes punched in them, and soldered together. They are then made smaller or filed until of the desired size. In order to mount these disks so they run true, the worn out bur should be placed in the engine and while in revolution a file mark is made all around it, to mark the place where the disks should be soldered. When this is done the shank is placed through a hole in the anvil and the disks flattened out evenly with a hammer. These polishing disks are made rapidly, and self-made instruments generally are more satisfactory than those which are found on the market. Soft metals (zinc, etc.) are not suit-

able, because the surface of the gold filling becomes coated with it. Crown cavities, or those readily accessible are polished with corundum and rubber cones and points, which are made very readily. For the final finish I use small cork cones. Wood and rubber points may also be used for this purpose.

I have taken it for granted that the exclusion of moisture had been attended to. However, sometimes this is well nigh impossible. Sometimes the cavity extends so far under the free margin of the gum that the ligature can not be fastened and held beyond it. In this case a clamp is used, the rubber dam passed over the clamp and the ligature tied beyond it. Or what is better and simpler: Take a piece of wide rubber tubing, such as is used for regulating teeth, cut it in two, take one piece and punch a hole with the rubber dam punch, pass this half ring over the tooth, allowing one end of the tubing to extend on the lingual side, and the other on the buccal, as shown in Fig. 8. The powerful contraction of the ring causes it to work its way under the gum, and pushes the rubber dam (which has already been applied) ahead of it, down below the gum margin. It must not be forgotten to remove the ring before the patient leaves. Cases are on record where these rings in the regulation of teeth have worked their way, within a few days, to the apex of the root. In



FIG. 8. RUB-
BER RING,
in situ.

one case which has come under my observation, a young lady applied a rubber ring for the purpose of bringing nearer to each other, her upper central incisors, which were quite far apart. In consequence of looseness of the teeth and formation of pus in large quantities, they were removed in eight days, and the ring found to encircle the apices of the two teeth. Another method consists in filling that part of the cavity near the gum with tin or amalgam. After a few days the visible portion can be cut away, leaving about one or two millimeters to project above the cervical border; generally the application of the rubber is now a very simple matter.

When an approximal cavity extends not only below the margin of the gum, but also over the surface of the crown, I invariably fill the bottom of the cavity with tin or amalgam, so as to secure a certain adaptation of the rubber dam. The loss of a gold filling from the lower left first molar of my son led me to this experi-

ment. This tooth at first had a mesio-distal cavity which was filled with gold. A year after the distal portion of the filling came out, and I filled this portion with amalgam, being satisfied that in condensing the gold when first filling it, I did not get the filling perfect at the cervical margin, for at that time, I was not a believer in V-shaped separations. Soon thereafter, the mesial portions of the filling, also came out, and as the young man was at that time at another city, the cavity remained open for four months. During this time, caries had proceeded under the gingival margin and over the masticating surface of the tooth. Having removed all decay and frail portions of enamel, the mesial surface was V-shaped, and the unexposed pulp carefully avoided and the cervical border covered with amalgam. Next day this filling was cut down even with the gum, and also part of the amalgam from the distal portion removed to the same distance. A connection with heavy undercuts was made on the masticating surface, and the two cavities made into one. This was then filled with gold. Fig. 9 illustrates the prepared cavity as well as the completed filling. The entire masticating surface, except the cusps, is of gold, of the amalgam nothing can be seen, except



FIG. 9.—COMPOUND GOLD FILLING.

when examined with a mouth mirror. This filling required one-half ducat (1-16 ounce) of gold, and its condensation with the mallet, without an assistant required only thirty minutes. The filling is in good condition, and is a proof that this class of compound fillings have an antiseptic action, and have really more preservative qualities, than gold alone.

This filling was examined by M. Mayer, of Munich, who nine months later, wrote me that after having examined this filling he has again observed the excellent qualities of Nedden's crystal-gold. He believed the filling of the lower molar to be so difficult, that he would consider its preservation with gold impossible, and in his practice would have recommended the use of amalgam. He expressed his doubt whether any other kind of gold could be used in filling such a complicated cavity. M. Mayer has formerly used this crystal-gold with satisfaction, and has tried nearly all other manufac-

tures of gold, but finally again returned to Nedden's crystal-gold. He prefers this gold also for the filling of the smallest of cavities, a few crystals are carefully placed into the dry cavity and tightly pressed into it. In two or three minutes after the cavity is prepared, these fillings are introduced with the least exertion. He is of the opinion that those who use other kinds of gold, could make the best crystal-gold fillings in from three to four times less time, and with less labor and torture of the patient as well as themselves.

The principal enemy of Nedden's gold is moisture. The slightest moisture destroys all cohesiveness, while under its perfect exclusion, it can be contoured to any required hight with perfect impunity.

Its introduction does not require heavy pressure or malleting. It can be condensed with ease on hardened cement or amalgam bases, and is especially useful for approximal cavities of weak incisors, which can not bear much pressure. I have seen some of the most beautiful gold fillings introduced by the inventor of this gold (who now fills a premature grave), which were introduced without rubber dam, mallet, clamps or other aids, and which undoubtedly are still doing good service. Last year, I saw gold fillings in the mouth of his widow, which were placed there by him, twenty years ago. M. Blumm, of Bamburg, has a number of patients who have fillings made by him over twenty years ago, of his own crystal-gold, and which are now in good condition.

The pulverizing of the gold can be prevented by fastening into a box a piece of platinum gauze, about half an inch from the bottom, if the gold is torn with needles into suitable shreds while laying on this, the fine particles of the previously annealed gold drop through the gauze.

For convenience in filling buccal cavities, a method similar to that suggested by Evans, but much improved upon, has been suggested by Dr. Herbst. After the tooth to be filled, and several adjoining ones have been covered by the rubber dam, a wedge-shaped piece of wood is put (on each side of the tooth to be filled) between it and its neighbor. A quantity of modelling compound or shellac, about the size of a walnut, is softened and pressed up and around several teeth, leaving the one to be filled free. The points of the wedges between the teeth assist in re-

taining this in place; with a sponge moistened in cold water, the hardening of the modelling compound can be hastened. When everything is dry, the "window," or matrix is warmed, the rubber dam raised above the cavity and the gum, and the warm matrix is pressed into the modelling compound or shellac, in such a way that its bent lower portions are in the mass, and the small projection above the cavity and under the gum, pressing the latter ahead of it. The rubber dam is held stretched until the matrix is firmly in place and the modelling compound is hard. A small piece of punk is then placed on the projection above the cavity, and the rubber dam allowed to rest upon it. The punk also prevents the rubber dam from slipping down between the matrix and the cavity. If this matrix can not be had at the dental depots, it can be made in the following manner: Cut a piece of metal which is not too soft, German silver plate will answer the purpose, file it until it assumes the form illustrated in *c*, Fig. 10, punch a hole, and cut a window, round or square, to suit the case, the projecting portion should be bent so as to lay against the tooth, and on this the rubber dam rests. The lower

end is also bent to hold more firmly when warmed and pressed into the compound or shellac. Before applying it the projection should be filed to fit the neck of the tooth. This may be done at the tooth or from an impression. Evans' clamp may also be used with Herbst's manner of applying the modelling compound or shellac. Fig. 10 illustrates Herbst's method with Schlenker's "window."

When cavities are very large it is my custom to fill the floor

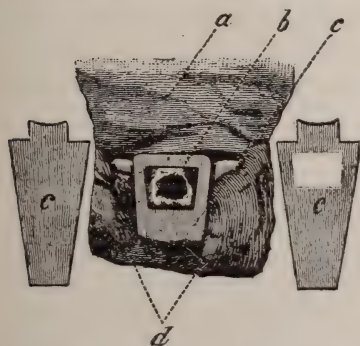


FIG. 10.—HERBST'S MATRIX FOR BUCCAL CAVITIES NEAR THE GINGIVAL MARGIN.

a, Rubber Dam; *b*, Cavity; *c*, Schlenker's Rubber Dam Window; *d*, Modelling Compound or Shellac.

with Poulson's mineral filling, with Nedden's crystal-gold, tin or amalgam, and fasten into this a platina pin. As a general rule the pulp in this case is either destroyed or diseased and its removal is necessary. In that case the pin or wire is filed so as to extend into the root canal. When the root is ready, it is filled

loosely and about one-third of its length with crystal-gold, and the wire is firmly pressed up. This drives the gold into the finer portions of the root canal and the wire is held firmly in place. Gold or tin is now built up around it, until it extends into the cavity; these pins are so firmly held that it is impossible to remove them even with forceps. Gold can now be built up about the pin as illustrated and described on page 432, until the cavity is filled. If amalgam or cement is used for a root filling, the hollow plugger in being used for condensing will give the pin the desired direction, giving the most convenience during filling. In an approximal cavity the pin should be in the center, in compound cavities, in the corner of the tooth, and in building up an entire crown, it should be in the center. In the latter case the intended form of the crown can be produced in wax first, and the platina wire cut off somewhat higher up, so that its end should not show through the filling. Fig. 11, illustrates the manner of anchoring fillings.

In anterior teeth, I use cement, if the cavity does not extend below the margin of the gum, as in *a* and *b*, but if it extends below the gum as in *c*, I use tin, and in *d*, amalgam, or if the latter cavity is readily accessible, tin may be used. Tin has this advantage: Nedden's crystal-gold unites with it as well as with cohesive gold, which is not the case with other preparations of gold. The basis filling with the anchor-pin is permitted to remain from eight to fourteen days, in order to await any possible periostitis which might ensue. The pin itself should have a thread cut on its surface, and when the crystal-gold is packed about it, it holds the pin more firmly. That the cheek or tongue may not be injured by the projecting portion of the pin, it should be covered with wax. Before attempting to fill the tooth, it should be ascertained whether the pin and basis filling is perfectly firm. It must be so firm that it can not be removed with strong pliers or forceps. A hole can be drilled into the end of the pin, for the reception of a cross-piece, this is done when the filling is almost completed. A screw with four projections is even better. The loss of an anchored filling I consider impossible; in my practice they have been invariably successful. The gold is generally cut with a punch which has been made the exact size of the cavity (See Fig. 5, number 5). Into these exact pieces of gold a

hole is punched, to correspond with the size and location of the pin, and these are carried with the gold-carrier, illustrated in Fig. 5, number 6, into the cavity. The hollow plugger, which is generally made or shaped for the case in hand, on a cast made from an impression as previously described, is of the same size as the cavity, and a single pressure condenses the gold over the entire surface at once. From fifteen to thirty such layers will make a large filling. It is generally best, however, to go over the surface with a small point, and to condense it with a mallet, thus correcting any possible defects.

For the purpose of building up entire crowns, a plaster model is made, a suitable matrix is then fitted to the remaining portions of the root and crown, and to the antagonizing teeth of the opposite jaw. This matrix if not intended to remain permanently is left open, and tied together with a soldered wire, placed on the tooth and the anchor-pin filling introduced in the manner already described. During the operation the matrix is permitted to remain, when the operation is completed, and the wire cut, the matrix can be removed. It is not necessary to polish these fillings. When the masticating surface is finished with cohesive gold foil, no polishing will be necessary. Cohesive gold foil and crystal-gold cohere perfectly. The first layer of the

foil is gently tapped against the crystal-gold, succeeding layers are polished into place with a burnisher. Heavy foil, without being folded answers the best purpose. The rubber dam, of course, is necessary to protect it from moisture.



FIG. 11, ANCHORAGE FOR GOLD FILLINGS.

a, Incisor; b, Cuspid; c, Bicuspid; d, Molar.

foil, but Nedden's crystal-gold can be manipulated at least three times as rapidly. It wedges itself perfectly into the threads of the pin; other preparations of crystal-gold do this only to some extent, and gold foil not at all. The gold packs itself so perfectly against the walls of the matrix, that a name cut into the matrix (as was formerly the practice with gold plates) is so perfectly

These operations can be performed with other preparations of crystal-gold and also with gold

represented on the surface of the filling, that it can be read. I have demonstrated this at a dental society meeting in Dresden.

For the filling of crown cavities rapidly, I sometimes prepare crystal pellets. With a sharp knife pieces of gold are cut to correspond with the size of the cavity, these are rolled between cardboard until they are round and the same width as the cavity. These are annealed and laid on annealed pieces of foil, with which they unite, and the latter is rolled around the crystal pellets. These pellets are so compact that when they are condensed, two of them will fill the cavity. As previously stated, the bur and plugger should be of the same size as the cavity. And these pellets are pushed through that hole of a gauge which corresponds with the size of those instruments. As generally only two pellets are necessary for a cavity, frequently one minute will be sufficient for their introduction and condensation. These pellets can also be suitably prepared for fissure cavities and for the cavities about the cervical margins of the teeth. The pellet should be twice as large, but exactly as long as the cavity. A single pellet is sufficient to fill the cavity, and when the foil has been closed at the ends of the crystal-gold cylinder, and also thoroughly rolled around it, so that no moisture can enter it, such a filling can be made solid and perfect entirely under water, and in so short a time as one minute.

Another method of making simple crown fillings is the following: Gold wire having the diameter of the cavity is selected, near one end of it, it is roughened lengthwise and the other is cut off at the opening of the cavity. The cavity is then filled about one-third full of crystal-gold and the wire driven into it with a mallet. The force drives the crystal-gold into all parts of the cavity. Eighteen carat gold, using silver as an alloy, can be used for this purpose, and gold thus alloyed answers all purposes of pure gold.

I trust that the profession in the United States will give this preparation of gold a trial, for I am confident that its advantages would be so quickly and readily recognized that many would find it one of the best preparations for rapid and thorough filling of cavities of the teeth.

"TRY AGAIN."

BY S. B. PALMER, M. D. S., SYRACUSE N. Y.

Mr. President and Members of the Central Dental Association of Northern New Jersey:

It would have afforded me great pleasure to have been present at the reading of this paper. It was not best for me to be absent just at this time; the best I can do, is to offer a few practical suggestions respecting the further preservation of a class of teeth, which at present, if teeth possessed intelligence, would have reason to tremble in their sockets.

This has reference to teeth (generally those of adults) such as have been filled and refilled until further treatment would seem hopeless. The discouraged patient looks into the future and beholds the "crowning day coming" but is not ready to meet it. In most cases it is best to "try again" to fill the teeth.

Throughout the history of dentistry, badly decayed teeth have shared a hard fate. The mechanical dentist, whose revenue is received mainly from the insertion of artificial dentures, longs to grasp them in the forceps; on the other hand, the more advanced prosthetic operator sees in them good supports for crowns and bridges, and as readily attacks the crown with excising forceps, and the quivering pulp with sharp sticks. This is no criticism upon this class of operations, when done properly, as no one can enjoy its benefits to a greater degree than the writer.

It may be desirable to retain teeth which by ordinary methods would not be worth filling. The process to which I allude consists in fitting pure gold plate coverings, to protect the surface from wearing, while the remaining portion is filled with phosphate cement. This style of work is not introduced as new or original. It, however, possesses greater merit than has been awarded to it. The demand for surface protection has led to the late invention of porcelain coverings, designed to be used in like manner for the same purpose; also, a furnace for baking porcelain for ten dollars per month, beside other devices not necessary to mention in this connection for "Land's" sake. In some respects, I am in favor of "high license" but not in this case.

The cases for which gold coverings are most appropriate are found on the oral teeth, on labial surfaces or where the gums

have receded from the enamel. The form of the cavity is often of a crescent shape, color of decalcified portion dark brown, with margins far below the normal structure of a tooth. All know that these condition forbid gold for permanency. The operation consists, 1st, in preparing the cavity in the form the case demands, avoiding sharp angles. 2d, cut from a plate of pure gold, of about twice the thickness of dental plate, a piece a little larger than the surface of the cavity, bend it to the curve of the tooth, then grasp it with delicately pointed pliers and grind it to fit with a corundum wheel on the engine. Be careful to grind on a bevel like a screw head, the inner surface being the smaller. By this means, the outer surface may be made to fit accurately. When fitted, lay the convex surface upon a piece of cement, such as the gasfitters use for cementing joints; heat an instrument and press the gold until it becomes imbedded in the compound, then go over the surface with a sharp graver and raise up points. On removal, should any of the compound adhere to the gold, remove it by holding in the flame of a lamp. Try it in the cavity to see that it does rest upon the points. When ready, set it with oxyphosphate, the same as you would a crown or band. After years of wear such fillings looks like solid gold; decay is unknown beneath the gold. Large crown cavities need more than the raised points to hold them firm. One case which I will mention will explain for all. A bicuspid was decayed from the approximal surfaces across the crown, leaving the outer and inner cusps perfect, with walls so thin that any packing of gold would wedge them apart; a plate in the form of a staple was fitted and cemented as above described. The occlusion of the opposite teeth depressed the centre of the gold, causing the end to spring out and loosened the piece. To guard against like failures, I cut a fine thread from a plate of gold and platinum, and wound it around a fine wire in the form of a spiral spring. Solder one side of the spiral to the gold, the solder will give strength to the piece, and the gold and platinum whether cut apart, or left in loops will afford firm anchorage for the gold covering.

Large unsightly amalgam fillings can be covered beautifully by this process. In cases where patients object to amalgam, beautiful fillings may be made in this way.

Another, and I think original operation, has helped out of

difficulties where few would have faith to "try again." That is, re-inserting gold fillings. This has been my practice over eight years. The idea was given to the profession in a paper during the time when society transactions were intended for the good of members only, or at least, it has not been tried so far as known. The first case was one where a superior central, articulated squarely with the inferior teeth, and till about one fourth of the tooth had been worn away, which loosened the fillings on each side, so that the cavity when prepared extended from the lateral surfaces across the cutting edge, making one filling. Several years after the filling was inserted, the patient returned with it loose, the tooth having worn away. The thought came to re-insert the same plug. The cavity was excavated sufficiently deep to receive the plug and it was set in phosphate. This must have been eight years ago, and since then the same thing occurred and the process was repeated. I think it is still doing well. The tooth is of a dark yellow color, and very soft; gold alone would not be worth the trial in this case.

Other cases soon followed where the corners of incisors had been restored by contour fillings, and the fillings treated with equal success, even better. Where the tooth structure is firm, there is no failure.

The most novel case is one which has been in use six or seven years. A superior incisor had lost a large contour filling. On replacing it the gold fitted quite accurately and it was cemented in. After a time, the case returned with the thin corner of the filling broken away, enough to spoil the looks of it. I went to work to remove the filling whole. I could only do it by the use of the smallest fissure bur upon the lingual surface of the tooth which of course left that portion of the cavity much too large. As the tooth was hardly of a nature to warrant a new gold filling, the old one was placed on charcoal and the corner built out with solder, which was finished in the lathe and the filling again re-inserted, and the structure is at present waiting for a crown, for the faithful duty it has performed.

Observation teaches that a lining of phosphate is a benefit under the metallic filling. Of course, gold cannot be packed upon a thin lining of cement without danger of breaking up the material, but amalgam can, and by this means, the dissolving of den-

tine and shrinkage of filling is overcome. The thinner the lining, the better, as there seems to be little or no decomposition in such cases.

For such linings, mix the amalgam and dry the cavity; mix the cement rather thin and press it against the walls of the cavity, and at once introduce the filling which will force out all except that required to fill the porous dentine and roughened surface of the cavity. This thin lamina seems to perfectly unite the filling to the tooth.

We have reached about the limit of skill in manipulating all the filling materials at our command; we are not satisfied that we have yet arrived at their greatest benefits by combinations in one form or another. I think the best field for investigation lies in cavity lining: there is a lack in all I have tried, yet, I will "try again."

Of course, seventy or eighty per cent. of teeth that are filled, need nothing more than good gold fillings to preserve them; but the twenty or thirty per cent may be in a condition to demand more than gold alone, to warrant success. Results do not happen; they are the outcome of chemical laws, instituted by combinations of the materials at the time the plug is inserted. This doctrine was heresy eighteen years ago. Practice is now so modified, that the colleges teach discrimination in the use of gold. There is much to commend its use, and it has been the study of the writer to know when, and under what conditions, it could be depended upon.

The physician when called to his patient, first diagnoses the case, then applies the remedy. The dentist should regard each abnormal tooth as a patient, separate from the possessor of the organ.

The large number of teeth that will allow universal treatment formerly, established the practice that gold was the best material. Now, that assertion needs qualification. What would we think of filling with gold, the lateral cavities, in the incisors for a child eight, or ten, years of age. The fact that cavities exist at that age, is proof that the teeth are not sufficiently calcified to warrant preservation with gold. Perhaps it might be well to give the reason why such fillings prove failures.

The poorly calcified teeth of the young, are highly organized;

the gold, in contact with the sensitive organic tissue creates inflammation sufficient to destroy vitality in the dentine ; this is done by thermal shocks. Fully developed teeth may also respond to sudden changes of temperature, the action being so slight as not to devitalize, but rather stimulate, action, whereby the process of calcification is carried on to produce a non-conductor and thus, sensitiveness ceases. While, in the other case, the devitalized portion turns a shade darker and decomposition of the organic matter sets in, which is greatly aided by the conductivity of the plug, which is a potent cause of decay around fillings. Thus far we have been considering teeth below medium grade, still the leaky filling in a normal tooth will bring about the same results, the chemical action being somewhat different, as the fluids which intervene between the plug and dentine soon become acid, which acid acts upon the lime salts, thereby exposing the organic portion of the teeth to thermal changes, with the same disastrous consequences already mentioned.

Having noticed the action of gold upon highly sensitive dentine, so often and thoroughly, I rarely fill a cavity that is very sensitive immediately after the preparation has been made ; a filling of gutta-percha in a few days will remove all tenderness and no further trouble is experienced.

The importance of correct diagnosis cannot be over-estimated; the requirements at times are beyond our wisdom or knowledge.

Two cases presented in my practice, recently, were so out of the ordinary channel, that I give them for the benefit of others. A patient had sought medical treatment for a pain in the angle of the jaw ; the difficulty increased till the muscle upon the right side became rigid and inactive ; it was with difficulty the mouth could be opened. On examination, I found that the third inferior molar contained an amalgam filling on the posterior surface, partially under the gums, also a large crown filling which had been inserted since the one mentioned. The fillings were in good order, and what is unusual, the crown filling was bright or much the color of one just inserted. The teeth were not sore and the gums were healthy. By testing with warm and cold water there was more sensitiveness than ought to have been in a tooth that had been filled so long. The crown filling was removed and there was evidence that the filling leaked. The cavity was shal-

low and large, thus exposing two-thirds of the dentine of the masticating surface. There was no discoloration of dentine and only slight indications of decalcification. To be brief, a filling of gutta-percha soon removed all unpleasant symptoms. The cavity being shallow, the tooth was again filled with amalgam, having previously introduced chloro-percha as a lining; soon all the difficulty disappeared. I think if at first the cavity had been lined, or an amalgam used which contained copper, there would have been no trouble.

The other case was a superior third molar, where I had filled with amalgam on the approximal surface of the second molar, the latter at the time had an amalgam filling in it. The fillings were contoured and all right in that respect. Had one of the plugs been gold, I would have looked for like trouble, but not with amalgam. Strange to say, the pain was not from sensitiveness of the dentine or pulp, but in the gums between the teeth and around the wisdom tooth; the tooth was healthy but the gums suppurated from the inflammation, which I attributed to galvanic action between the two fillings, the gums forming a portion of the circuit. The treatment consisted in destroying the contour of the plugs, a good space was gained by the sand paper disk, and a cure effected.

We read that the "little foxes spoil the vines." In dentistry they may be "bugs" or they may be electric currents; no matter, they get there, and it requires study and patience to know how to exterminate them. "If at first you don't succeed try, try again."

THE MANIPULATION OF PULP-CHAMBERS AND CANALS.*

BY E. NOYES, D. D. S., CHICAGO, ILLINOIS.

A proper consideration of this subject includes some account of the anatomy, the instruments required, and the manner of their use and the materials for root filling and the modes of their insertion. Aseptic and antiseptic conditions depend upon proper manipulation, accompanied by suitable therapeutic treatment.

The anatomy of these parts has been too little studied, and very imperfectly described. Many of the older practitioners

*Read before the Odontological Society of Chicago.

have it pretty well learned, at the expense of much wasted time, and some perforated roots.

If students were required to make numerous dissections of teeth, selecting those of different types, and from persons of different ages, making the cuttings quite numerous, it would prove of great value to them in practice. Prof. Black advises the grinding of teeth and making silhouette prints by placing the ground surface upon an ink pad and making a print upon paper, which can be done with perfect accuracy so as to show the outline of the tooth, and the exact outline, size and location of the pulp-chamber, or canals, which the grinding happens to cut across, by beginning at the end of the root and making the impressions at frequent intervals, the form and size of the canals and chamber can be shown in cross section at frequent intervals throughout their extent. The longitudinal section can be shown in the same way by grinding from mesial to distal surfaces and from labial to lingual. In this way a student may spend time enough on them to become quite familiar with the varying forms and sizes of pulp-chambers and canals, and the relation of these to the external forms of the teeth of different types, the location and size of the openings from the chambers into the root canals (especially of the molars), and the direction of the root canals with reference to their entrance through the crowns of the teeth, which will prepare him for the clinical study of the position of the teeth in the jaws, and the direction and opportunity of approach to root canals through the open mouth; and he will get some idea also of the deposits of secondary dentine upon the walls and floors of pulp-chambers and sides of canals, and the occasional irregularities and idiosyncrasies of such deposits, and of pulp-nodules, all of which are important items of anatomy with reference to the required manipulations.

The form and size both of pulp-chambers and canals, varies very greatly indeed, age being the most constant and certain factor in relation to it. Some chambers are found with projecting horns reaching very nearly to the enamel at the corners of the crown, and others will not be reached by a square cut across the crown, unless it be very near the gum line. The depth of the chamber is then very small, and a rapidly cutting engine drill may pass through it and enter its floor without the fact being

recognized till the alveolus is reached. This contraction of size is probably caused by deposits of secondary dentine, which are often greater in the chamber than the canals, and usually raise the floor of it as much as they lower the roof. This contracts the openings into the canals and furnishes the most frequent reason for enlarging them. The presence of pulp-nodules, either free or attached, may sometimes prove a confusing incident of anatomy, unless there is good opportunity to see clearly so as to find out what they are and the best way to dislodge them.

The inward inclination of the lower molars and bicuspid, makes access to their root canals much more difficult than it would be if they inclined outward as the upper ones do. A straight broach standing in the posterior canal of a first lower molar, will usually cross the median line of the face not very far from the front of the nose when the mouth is open. This circumstance, together with the disposition to get into them from the same side, instead of across the mouth, has led many a student to cut and search for root canals along the inner side of these pulp-chambers instead of the floor, and if he uses the engine he is apt to get through the side, not very far below the margin of the gum. This danger is much less in case of lower bicuspid, for though the approach to them is often indirect, and requires the bending of instruments, almost to a right angle, the canals are single and not very much flattened, so that they are usually free without artificial enlargement, and little cutting is needed except to take the entire roof off from the canal opening.

Of the instruments for opening pulp-chambers, but little need be said. They are for the most part bur drills, or if sound or filled teeth are to be opened, square or spear-pointed ones, chisels and hatchet excavators. The instrumentation requires more consideration. The direction of approach is usually determined by the cavity of decay, but the instances are frequent in which there is either no cavity, or it is not in a proper place, or is already well filled. Incisors and cuspids may be easily opened from cavities in either proximal surface, or in most cases from the lingual surface; but lateral incisors already filled, require careful consideration as to strength before cutting out so much of the lingual wall, as must be done to enter them from that side. When an incisor is opened in this way the cut must be extended toward

the point of the tooth sufficiently to afford access to the portion of the pulp-chamber between the entrance of the drill and the cutting edge, so that it may be cleaned and filled, leaving nothing in there which may afterward darken the tooth. Lower incisors may be opened from the lingual aspect also, but occasionally the mouth will not open sufficiently to do so except with the right-angle attachment in the engine. It will sometimes do to drill these from the cutting edge, notching out the posterior plate of enamel and leaving the anterior complete, so that the filling to be made when treatment is completed, will be but very slight disfigurement.

Bicuspid, either upper or lower, may be very well reached through distal cavities, by cutting down the crown angle, and must not be weakened by cutting through the mesial side, if sound or but little decayed.

A distal cavity in a molar, if not reaching to the grinding surface, may as well be filled, and an opening made independently. If we do open through a distal cavity it must be cut forward beyond the center of the grinding surface. It is sometimes advised to open lower bicuspid and molars from labial side. Unless the orifice reaches very near the grinding surface angle, the curve of the broach entering the canals will be quite a quarter circle, (90°). If cut so high, the very thickest portion of enamel must be cut through and the tooth is weakened more than if the roots are entered from the grinding surface, and this latter can usually be done so as to reach the canals with a curve not more than 45° . Having entered the pulp-chamber with sufficient care to avoid missing it, or going through and entering its floor or side, the next step is to take off the entire roof. There are a few exceptions to this, in cases of front teeth that would be too much weakened by it, but even these when treated through drill holes, should have as free access as strength will permit. But little needs to be said on this point in this company, but it is hardly possible to talk too positively about it for the general public and for students. I can scarcely remember a case in which I have had to treat teeth previously opened and treated by others, in which the first necessary step has not been to open the pulp chamber properly so as to obtain access to the roots. A drill hole into a molar need not always be quite so large as the diame-

ter of the chamber, but the interior should diverge from the opening to the corners especially, and the opening should be large enough for free use of instruments, and for lighting all parts of the chamber so that openings of canals can be plainly seen. An upper bicuspid can be treated through grinding surface with less satisfaction than almost any other tooth, and in most cases I would much sooner take out a big proximal filling than attempt it. The thinness of some of these at the neck compared with the width of their bell-shaped crowns, affords the liability to drill out at mesial or distal side just beneath the gum, instead of entering the chamber and canals fairly, and the two canals with a narrow slit between, makes it necessary to see better than is feasible through a drill hole no larger than consistent with the size of the crown.

Free access having been obtained to their openings, the next step is to enter and cleanse the canals. It must often be done with great caution, till quite sure they are perfectly disinfected. Sometimes this is most safely accomplished by filling the pulp chamber with a disinfectant and closing it tightly for a day or two. It should be a very unusual necessity that compels anything to be done in a pulp chamber or canals without a rubber dam over the tooth. Since asepsis or antisepsis are the most important requirements of treatment, after once beginning they should always be tightly closed, except when opened for dressing, with the rubber dam on. No exceptions should be made to this rule, except when it is found by actual trial that a tooth will not tolerate stopping up.

In most instances it is worth while to ream out the openings of the canals to some extent, sometimes only enough to obtain a funnel shaped orifice for easy entrance. If a broach must be carried into a canal twenty or thirty times during treatment, it makes an important difference whether it can be entered at once, or whether half a minute is spent each time trying to hit the hole. It is often a great saving of time and trouble, and is occasionally essential to the making of a good root filling, to enlarge the canal for one-fourth, one-third or one-half its length, but this requires care and good judgment, and often the benefit will not compensate for the risk, but many canals are larger than their openings, and some enlargement is indispensable. Any of the ordinary

cavity drills are of little use for this purpose. They will either leave the canal or shoulder its side wall, dangers which must be constantly watched in using any instrument for this purpose. The Talbot tapering reamers are excellent in places where they can be applied, the only trouble with them being that I have never seen one of them of exactly the right temper, and very many roots are not accessible to them. Most canal work can best be done with instruments having flexible spring tempered shafts, which must be of exactly the right size, taper and temper, in order to be very satisfactory. For cutting instruments, the Gates or Gliddon drills, formerly marked B. 1, but now, I think, No. 10, are more satisfactory on the whole, and more uniform in quality, than any others I have found. A three cornered reamer with a short head would often be just as effective if put upon the same kind of a shaft, but they are usually too stiff or too limber or tapered unequally so as to be unsatisfactory. There are few things that require a nicer adaptation of means to ends than the effective manipulation of pulp canals.

The removal of a pulp is usually best effected with a barbed broach, though a fine hooked one may sometimes be carried to the apex and then rotated so as to cut or tear off the pulp just within the foramen. Many of the barbed broaches now sold are unsatisfactory, the barbs being so small or ill formed, and the broach so clumsy that they either prove too big to pass freely, or they will turn about within the pulp without grasping it so as to bring it away, or if the barbs are better, they may be cut so deeply that the broach will break off. It is best to examine them with a glass before using, and bend them with the barbs outside the curve and see if the curve is uniform. A barbed broach should always be entered very carefully and moved backward and forward and turned about so as to be sure that there is room for it in the canal, or else when turned for the purpose of entangling the pulp, it may be cramped and twisted off.

For some cases, especially in small canals, the swiss broaches, if tempered exactly right, are better than the reamers or Gliddon drills for making very slight enlargements, and dislodging debris, and better than barbed broaches for breaking up and removing small portions of pulp tissue. There is but little danger that

they will be cramped in a small or flattened canal and twisted off if they are not used too many times.

After the necessary enlargement and the removal of the pulp tissue, the manipulation is principally for the purpose of carrying in medicines or wiping out the canals, and is done with fine broaches armed with a little cotton. The piano wire or swiss broaches are best for this, A very low spring temper, which combines a considerable degree of stiffness, softness and elasticity, so that it can be bent into a curve and stay there, and still have some resistance and some spring.

The winding of cotton should be tight enough to be carried into the canal as far as the broach goes, and yet it often needs to be released so as to withdraw the broach and leave it there. All this sounds somewhat like "blowing hot and cold with the same breath," and requires nice manipulation. The surface of the broach needs to be just right also. If a round one like the Donaldson, it needs to be slightly roughened without being too rough. The straight Donaldsons are very well prepared in this respect, and if the hooked ones are to be used to carry cotton after the hooks have become spoiled, they may be roughed with a file.

After the canals have been freed from their original contents and all debris or foreign matter that may have lodged in them, and have been made accessible to the broaches throughout their length, and assurance is gained that they are aseptic.

The first step toward the filling, is the drying of them, and this is both important and difficult in proportion to their smallness. It is easy to fill a pulp chamber with gutta-percha dissolved in chloroform and churn a broach through it into a wet root for a long time without carrying any in, and I have little doubt that a good many are filled(?) in that way, and contain nothing but the cone which is carried in a little way perhaps. After wiping out canals as well as can be done readily, alcohol may be carried into them. If a lower tooth, filling them full of it (absolute alcohol would be better). This can be wiped out and evaporated with hot air or a canal dryer, much more rapidly and perfectly than water. It may be followed by chloroform used in the same way if necessary.

For a good many years I have filled almost all roots, except

the very smallest with Hill's stopping, softened or dissolved in eucalyptol, and can manipulate is so as to feel more certain of just what has been accomplished than with the chloroform solution. The canal may be first moistened (after drying of course) with eucalyptol or not, depending upon its size and accessibility. The smaller and more difficult the canals, the more fluid the Hill's stopping must be made, by using a larger proportion of eucalyptol. The cones should be rolled when wanted, fastened to the end of a canal plugger fine enough to enter some distance, but having some stiffness, the cone and the plugger should be warmed enough to soften the Hill's stopping, which may then be dipped into the eucalyptus and immediately carried into the canal, and churned in, by the same plugger at first and then with one which has been found by previous trial to be fine enough to reach the end of the root. It sometimes requires nice perception to determine just when the filling has reached the apex, and all contained air has been churned out of it, and to avoid pushing any of it through. Probably a considerable proportion of root fillings by any method, fail of absolute perfection by stopping a little short or else going a little too far, but the prospects for the comfort and durability of the tooth are greatly enhanced by having it just right. It is sometimes asserted that the sensations of the patient will furnish a certain indication when the apex of the root is reached by the filling, but that is very far from being always true. The sensations of the patient are a valuable help, and should be closely observed, but some will complain of pain from the first entrance of the filling into any part of the canal through the entire operation, and for a little time afterwards. Others will have pain whenever the filling is pushed forward, which will stop at every pause in the movement, and a good many will indicate, either by the time when a sensation is first manifest or by the different character of it, just the right time to cease crowding the filling forward.

The sensations in the operators fingers and his general perception of what is being done, which is only acquired by considerable experience, furnish a more trustworthy guide than the sensations of the patient.

ANTISEPTICS IN THE ORAL CAVITY.

BY L. A. KING, D. D. S., HENDERSONVILLE, KY.

Long after the principles of the aseptic treatment of external wounds had become recognized, the proper management of wounds of the normal opening, of the respiratory, digestory and uro-genital tracts was still a mooted question. It was an easy thing to produce in those regions an aseptic condition for the time of operation, but how to protect the wound from this inevitable soiling by the continuous discharges pertaining to these several apertures, was first shown us by Billroth, who successfully used iodoform, as a preventive of putrefaction. Eminently satisfactory as this agent had proven in his hands, there were many well-grounded objections to its exclusive use. I shall endeavor, therefore, to give a brief yet practical presentation of the Listerian principle of to-day, that has revolutionized surgery within the last fifteen years. Its adoption has brought so many changes in practice, has shifted the dentists' standpoint regarding all the important disciplines of the art in such a radical manner, that most of our text-books, even those recently published, are entirely inadequate to the wants of the progressive dentist.

To a large number of dental practitioners the aseptic and antiseptic methods present an incongruous chaos of seemingly contradictory, and often incomprehensible detail, arbitrary and varying according to the predilections or whims of this or that teacher, yet the principle involved is based on the correct observation of a common biological process, namely, that of decomposition of organic matter. The well known methods employed since the earliest dawn of civilization for the preservation of organic, especially animal, substances are based on empirical yet correct application of the cause of putrefaction, and the practical adoption of these methods to the healing of operative or accidental wounds, contain the whole essence of antiseptic surgery. What is sepsis and asepsis? It is not my purpose to enter into an exhaustive treatise of the essence of suppuration, and the whole complex conditions known under the name of sepsis. It may suffice to give a few outlines of the views that exists regarding the causation of the conditions in question.

All albuminoids, such as blood or blood serum, in fact all the

tissues of the dead animal body, will become putrid under certain conditions, namely: First, moisture; secondly, a certain temperature called warmth; thirdly, the presence of living organisms or fungi named "schizomycetes," better known under the name of bacteria and micrococci. If all of these are present the animal substance will ferment or putrefy; absence of any one of these conditions will prevent decomposition. To illustrate the condition permit me to refer to common facts. Fresh meat or fish well dried can be indefinitely preserved; freezing, and to a certain extent roasting, will also prevent it spoiling, and lastly, exclusion of micro-organisms, air-tight sealing after boiling, will insure preservation indefinitely. Decomposition is, therefore, always preceded by active micro-organisms, which will develop at once their disintegrating influence, as the condition favorable to their development—moisture and a certain temperature are present, a condition most favorable, always to be found in the mouth. Accidental or surgical wounds are eminently suited for the development of the fungi in question, the oozing blood and lymph, the bruised and dead cells of the exposed tissues, furnished severally from their natural connections, the moist pabulum of a proper temperature, the myriads of filth and dust filling the air in all inhabited localities, contain according to indubitable evidence a very large proportion of spores or seeds that, finding their way into the wounds of the mouth and its secretions, promptly develop into fungi, and at once set up a fermentative process known as decomposition. The products of this fermentation are more or less highly poisonous substances, Bergman's sepsin, the ptomaines of the French authors, and the local change set up in the form of inflammation, in turn gives rise to systemic trouble known as septic fever.

It was the immortal achievement of Sir Joseph Lister to have first attributed to fermentative influences the disturbance of repair, and to have led wound treatment into a rational, hence successful, direction.

Modern wound treatment is based entirely on the old and well known principles—preservation of organic substances. Of the several modes of preservation only two or three are applicable to oral surgery, namely, the actual cautery and chemical sterilization by germicides, either of which are sufficient and are safe

preventives of suppuration, and in this connection a few rules for cleanliness may not be out of place. The hands and especially the finger nails of the dentist should be well scrubbed with soap, preferably "green soap" or potash soap on account of its great solvent properties; rings, especially those having stone settings should never be worn by a dentist while operating; the instruments, lancet, forceps and scalers should be subjected to a careful cleansing with soap and brush, especial care being taken to remove dry particles of blood and pus from grooves, serrations and blades of scalers. Immediately before using they should be immersed for a few minutes in three per cent solution of carbolic acid, which is least injurious to them. Of disinfecting lotions, with a few exceptions, two will be found sufficient. For the immersion of the instruments a three per cent solution of carbolic acid as before mentioned and for irrigation and disinfection of hands, a solution of corrosive sublimate $\frac{1}{1000}$ to $\frac{1}{2000}$. The exclusive use of carbolic acid and corrosive sublimate is intentional, from the fact that these agents are first thoroughly reliable and highly effective, and are everywhere procurable; and adherence to carefully selected substances results in a thorough knowledge of their proper use under varying conditions. A convenient way of mixing solutions is the following: Carbolic acid one tablespoonful, or four teaspoonfuls to the quart of hot water will make a lotion of the strength of about three per cent.

Corrosive sublimate, keep on hand a few ounces of an alcoholic solution of the salt 1 to 10 in a glass stoppered bottle, one teaspoonful, or more accurately one drachm, of this added to a quart of hot water will make about $\frac{1}{500}$ solution which can be still diluted. The addition of one teaspoonful of chloride of sodium will prevent disorganization of the mercuric preparation. The selection of different lotions should be governed by the following conditions: Carbolic lotions are dangerous in the mouths of small children even in great dilution and should rarely if ever be used in them. Corrosive sublimate is also poisonous and is capable of causing salivation and fatal diphtheritic inflammation of the ileum if its use is immoderate. The greatest advantage of corrosive sublimate over carbolic acid is to be sought in its different effects upon the fresh blood clot and the tissues exposed to its action, in fresh wounds. Vessels that have stopped bleeding by

the formation of a clot within their orifices begin to bleed anew after carbolic irrigation. This is caused by the peculiar macerating effects of carbolic acid upon the fresh blood clot. Its color turns from a dark red to a light red. Its toughness and cohesion are lost and the slightest touch will suffice to detach it, thus renewing the hæmorrhage.

Corrosive sublimate does not dissolve clots, hence oozing stops by natural means during its use. Neither does it irritate the vaso-motor nerves as carbolic acid seems to do. This aseptic treatment in dentistry refers mainly to extensive lesions in the mouth such as necrosis of bone, fractures of the maxilla, in fact any surgery of the mouth especially after extractions. This treatment is beneficial if there has been ejecta occasioned by anæsthesia. The same precaution applies to every operation be it never so slight. Rubber dam and silk ligatures should both be sterilized; freshly laundered napkins are rendered so by ironing.

One more thought having a legal bearing remains to be mentioned. Although the germ principle of the diseases have not been accepted by a large number of medical men, it has been accepted by so many men of high rank, and has taken such a firm hold upon the general public, that scarcely any surgeon would venture to operate without the aid of antiseptic treatment in some of its forms. If this be important for the general surgeon, it must be equally so for the dental surgeon, for the same conditions exist in both cases. Uncleanliness or lack of care in the treatment of instruments before or after use, would be as likely to produce ill results at the hand of the dentist as of the surgeon.

GOLD, WITH MANIPULATION OF THE CRYSTALLOID.*

BY W. F. MORRILL, D. D. S., NEW ALBANY, IND.

Gold in whatever form presented, attracts our admiration, exacts our homage, and carries with us a life-long attachment. In the march of centuries, in the times of patriarchs and prophets, "when Solomon was arrayed in all his glory," the conspicuous ornaments and costly decorations of persons and of temples, were of gold. From remote ages to the present moment

*Read before the Kentucky Dental Association 1888.

it is the emblem of royalty. By it the white wings of commerce are wafted; by it the industries of the world are stirred into vigorous activity; by it science and art are developed and made useful to man. Whether found in the deep mountain fastnesses, imprisoned in the crystal quartz, or fashioned by the hand of genius, to glitter upon the heads of princesses and queens, gold always reveals a splendid nobility of character. It was never a plebeian. It scorns contamination with the baser sort. Its manifold virtues and properties exalts its power for good, as well as for evil. Nothing within the range of man's desires is more to be coveted than gold, and yet so alluring as often to become the voice of the tempter.

Conceding then, all the wondrous qualities ascribed to this precious metal, to which our every day's experience has made us almost sacredly familiar, its highest end in mechanic art was best attained when brought within the range for dental purposes. Here its full appreciation is realized; here there has no substitute been found; here it continues to grow in popular favor, and here it crowns our profession with manhood and dignity. Think of it, we have more than one hundred and fifty forms of gold fashioned for our use to preserve the teeth. This extensive assortment enables every dental operator to make choice selections suited to his taste and abilities.

Gold foil, notwithstanding "the new departure doctrine," bears a good record for preserving the teeth. It has been, and is still, a good standby—a precious help in time of need. No one would wish to disparage the merits of a material as time-honored, and one which will continue a favorite with many, and exclusively by a few.

But gold in its later multiplied forms for dental uses has had some remarkable epochs not easily forgotten. Perhaps the crystalline or sponge gold period of 1855 was more calamitous than any to which we may now refer. It was widely heralded as a material full of the budding promise to fill teeth easily, quickly, and more satisfactorily than with foil gold.

Hence, every operator at that time was eager to possess it, and thus escape the laborious drudgery that had been his ordeal heretofore. A trial of a few boxes of the crystalline so pretty to look upon, satisfied the most incredulous that no two were alike

in the working properties. The manufacturers were buffeting upon a sea of uncertainty in their methods of producing it, consequently failures were more numerous than they should have been. Besides an imperfect material, we had crude manipulations. The instruments used for impacting were unsuited to make tight margins, and leakages were common occurrences. Amid these sorry experiences and trials, sponge gold received a black eye, from which it has never wholly recovered. Many were led to wholly abandon it, while a few, mastering all its details of manipulation, have clung to it with tenacious fidelity.

New methods have since been adopted in the manufacture of crystal gold so that a better article is now on the market; nor should any dentist fail to acquaint himself with the advantages it possesses, for they are too important to be ignored. To become the especial champion of any one form of gold, is neither wise nor prudent, when we should avail ourselves of all the resources at our command. To become a successful manipulator of all forms of gold should be the cherished ambition and endeavor of every dental operator. To reach this aspiring eminence requires a precise knowledge of the properties and working capabilities of the material, a nice discernment of the location in which it is to be placed, and to possess a trained hand to embody what the mind idealizes. These accomplishments do not belong to everyone alike. Some may be physically incapacitated by organization, or mentally ignorant. It will not be presumed that deft and delicate operations on the teeth can be performed with the highest accomplishments, if the hand be the size of a blacksmiths, or to be so reduced in effeminacy as to resemble a dwarfs. The ideal hand is one possessed of long fingers, a stiff thumb, dry or free from perspiration. As the pianist acquires nimbleness and swiftness in execution by practice, so does the dental operator become expert and able. Our common observations of interior tooth structure into which gold is placed leads us to infer there is a kindred feeling between the tissues and gold. The proximity is so close to vitality that the subtle currents of feeling are often undisturbed by this compatibility. That kind of manipulation of gold which achieves the largest measure of success by making an impervious filling, and which least annoys the patient and the tooth, is the most proper and

the best. Any method which shortens time and gives good results should always be received with popular favor.

Among the numerous gold forms manufactured for dental uses, a new specimen, called crystalloid, by its resemblance to a crystal surface, has been furnished our profession by Mr. R. S. Williams, of New York city, a gentleman to whose indefatigable enterprise we have so often been indebted for new gold materials. In thickness it has that of heavy writing paper, being conveniently folded in paper at proper lengths for clipping without the fingers touching it. It can be introduced into a cavity in greater bulk and with a certainty of adjustment to the walls of the tooth, not obtainable with foil. In the application of the first piece, it usually remains where it is placed without becoming detached after withdrawing the plugger. It has also the special merit of spreading under condensation, which neither crystal gold nor other forms possess. It impacts toward the walls and leaves a filled surface smooth and free from "rat holes." The edges are easily made impervious to leaks and the whole is susceptible of a good finish. The instruments for crystalloid manipulation should possess a fair sized point and not too fine serrations. Otherwise, the gold will chop up and crumble away. Care must be observed in working the margins, and we can dispense almost entirely with the mallet, relying only on hand pressure for perfect consolidation. Crystalloid gold must be studied very understandingly to find out its capabilities, and then employ it where its adaptability seems best suggested.

In the short time your essayist has employed it he has found it most acceptable where the cavities were large, and especially for contour purposes. Its properties are very cohesive, and the clipped pellets weld rapidly, leaving no flaky surfaces to be repaired afterwards.

Be it then remembered that this new crystalloid form, the handsomest gold revealed to the eye under the microscope, like "the Star-Eyed Goddess, has come to stay."

A PLASTIC FILLING.*

BY H. B. TILESTON, D. D. S. LOUISVILLE, KY.

It was not my intention to have it understood that my contribution was to be an essay on the subject of Plastic Fillings in general, nor indeed an essay at all, my only desire being to bring to the attention of the profession a plastic filling which I have been using for some time with such satisfaction to myself, that I am anxious to give the profession the benefit of it; as much "*pro bono publico*" as "*pro bono professiones*."

I do not claim entire originality in the matter and it may be that some of you have already used it, but I am sure it will be new to some and worth trying again by those who may have used it before; and even if condemned by the latter, I shall be none the less satisfied with what it has accomplished in my own practice, and none the less convinced that in its place it is a good thing.

I may remark just here, that any filling material used without judgment as to its proper place under varying conditions, may prove of no value.

To be brief and to the point, the material of which I speak is composed of amalgam and oxyphosphate of zinc in proportions not fixed, but varying according to the case in hand. I first mix the amalgam just as I would for an amalgam filling, save that I do not express the mercury unless the excess is considerable. I then mix the oxyphosphate quite thin and quickly incorporate into it the pellet of amalgam, working it thoroughly with a very stiff spatula: I then roll the pellet between my thumb and finger and immediately introduce it into the previously dried cavity, press into place and burnish to the edges, trimming the excess with a burnisher.

I claim for this filling, that it combines the best and most desirable properties of each material and eliminates, to a large extent, some of the most objectionable features of both.

The spheroidal tendency of the amalgam by which a slight crevice so often appears above the edges of such fillings, is entirely overcome by the presence of the cement, while the solubility of the cement is almost, if not entirely, counteracted by the stability of the amalgam. The compound does not set so quick-

*Read before the Kentucky Dental Association 1888.

ly as the cement alone, but much more quickly than amalgam. When hardened, it takes a metallic finish under the burnisher and it is sufficiently hard in five minutes to be burnished.

The thermal conduction is less than that of amalgam used alone, and altogether it seems to be more compatible with tooth-bone than is amalgam.

We frequently meet with cavities in molars and bicuspids located upon the distal, buccal or palatal surfaces, large and superficial, with no lateral walls in which to make retaining grooves, or perhaps with one wall entirely broken away, and the cavity so out of reach or so sensitive, that extensive excavation is impossible. Amalgam in such a place is out of the question, and oxyphosphate, owing to its temporary character, is also objectionable, but it is the only thing we can rely upon to stay in such a cavity. Doubtless under such circumstances as this, we have all wished again and again for a material that would both adhere to the walls and be lasting.

These are the cases wherein the composition filling is pre-eminently indicated.

If the cavity is so shallow as to require a filling more of the nature of a cement, I use a greater proportion of oxyphosphate; if the cavity is deep enough to be slightly retaining in shape, for the sake of the greater stability of the filling, I introduce more amalgam than cement.

Where the cavity involves the masticating surface, I cover the exposed face of the filling with pure amalgam, thus presenting a more resistant surface to the attrition of mastication. The amalgam in such a case, adheres without difficulty and becomes a part of the filling.

For some time I confined the use of this material to the class of cavities of which I have just spoken; but as I became more confident of its efficiency, I have gradually extended the field of its usefulness, until now, I use it in nearly all approximal cavities which I would otherwise fill with amalgam. My experience with it convinces me that it is more reliable in approximal cavities than amalgam.

One case, more marked perhaps than any other, I will relate. The case is that of a lady whose teeth have been under my care over five years, and during that time I have repeatedly filled her

superior bicuspid teeth, they were largely decayed when I first saw them and I filled them with amalgam. The quality of the teeth was very poor and in a few months, refilling was necessary, when the teeth could no longer be filled with amalgam, I resorted to oxyphosphate cement, but this proved quite soluble in the fluids of the mouth and had to be frequently renewed. Two years ago in July I filled these teeth with amalgam and cement mixed together as I have described. I saw them a month or two ago and they were then in excellent condition.

I find this mixture useful in setting Bonwill's crowns. The post may be set in the root with the mixture, then the crown filled with pure amalgam and pressed down upon the plastic root filling, and packed against it with an instrument through the crown opening, and the operation finished with amalgam, or the mixture may be used throughout the entire operation.

I also use this material for filling approximal cavities in deciduous teeth. It is more quickly introduced than amalgam and does better service than either amalgam, cement or gutta-percha.

Gentlemen, I present this material to you in the hope that you will give it a trial and report at our next meeting what the result of your experience has been. No doubt some of you can improve upon the method of mixing or using it, if so, I want the benefit of your experience and improvement. I know from what I have seen of it in five years constant use, that it is a valuable servant and can be made to do good work. I am satisfied you will find many places to put it, and the more you use it the more you will like it.

PROCEEDINGS OF SOCIETIES.

CENTRAL DENTAL ASSOCIATION OF NORTHERN NEW JERSEY.

Dr. Meeker read a paper by Dr. S. B. Palmer, of Syracuse, entitled "Try Again." (See page 441.)

DISCUSSION OF DR. PALMER'S PAPER.

Dr. Watkins. Dr. Palmer sent with his paper two filled teeth, which he had prepared at short notice, to illustrate his paper. I will pass them around. You will notice there is a piece of gold

plate on the grinding surface of an amalgam filling in a molar and on the cervical approximal surface. The tooth decayed around it, and he filled the cavity on the grinding surface with oxy-phosphate and pressed this piece of gold plate into it, to resist the force of mastication. You can see that it has worn fairly, and was apparently in good condition when the tooth was extracted. It was extracted on account of two other large cavities coming in the same tooth in connection with it.

Dr. Brockway. Mr. President, I always listen to Dr. Palmer with very great interest and instruction. I have long regarded him as one of the most useful members of the profession. Not perhaps so brilliant and startling in his expressions as some, but, as you see in the paper which has been read, he presents sound reasons. It is very easy to manage successfully teeth of good structures and arrangement, but to manage successfully teeth of poor structure and with cavities in inaccessible and difficult positions is quite another matter, and beyond the attainment of a great many men in the profession. I regard the matter of judgment in the filling of teeth and in the choice of materials as of greater importance than high attainment of skill; that is to say, a man possessing judgment as to what method he should employ in filling a tooth, is more likely to succeed with only a moderate amount of finger craft, than the more skillful man who lacks that judgment and uses unfit material. And therein I conceive exists Dr. Palmer's great usefulness to the profession. He pointed out and insisted upon this very idea. In regard to his filling certain cavities with cement and covering with a little plate of gold, I have often wondered that it has not been more employed. I have used it myself in two or three instances only, and I confess that although in those cases I have been thoroughly satisfied with the results, yet not having the caps ready to hand, and it being a little inconvenient to make them, I have not resorted to that method as often as I might profitably have done. The porcelain caps which have been furnished to us I have found altogether too clumsy to be of very much service in most cases, and I think there is a good field for some ingenious man to make for, and supply to the profession, quantities of these caps of varying sizes for different cavities, for I am sure they would meet with quite general use in many cases.

Dr. Hodson. Mr. President, I do not know that I have anything to say in regard to the paper of Dr. Palmer more than that I like what he has said because it is very much like what we are all doing continually. He disclaims it as being anything original. The method he has employed is one that we often turn to; and I know him to be a very practical man, and a man that never says anything that he does not actually do. The method of applying gutta-percha to cavities before filling them with gold just because they are very sensitive, is one that we often turn to, but for myself I do not find much necessity for that, because I invariably line all cavities, large or small, with carboic acid (?) any way, before I fill them; and often I get very much the effect that I would from the application of a gutta-percha stopping for a time, and it is a saving of much time. The application of these caps was given to us many years ago by a gentleman from Buffalo, I think, who used platinum and struck up each cap from an impression, so as to fit the irregular surfaces of largely broken down teeth. In that case they were underlaid with gutta-percha, simply to make the gutta-percha (?) wear longer. I would like very much if some one would take up the suggestion of the last speaker, and give us something in porcelain that would apply in a delicate and artistic way, particularly to the labial teeth, in order to avoid the showing of gold in the front of the mouth. There is nothing more heart-breaking to an artistic operator than to be obliged to do it, and if we had some kind of porcelain facings furnished for that purpose it would be very desirable. If we make them ourselves we can only make little slots, we can make only little retaining points for the porcelain, and we have to depend upon the adhesive quality of the oxy-phosphate at the back to hold them in place. We cannot usually get the cavities deep enough to accomplish very much in that way with the thickness of those bits of porcelain. If they were regularly made and to hand, and we could have a variety to select from, with proper backing to hold them, and such a quality of porcelain that it could be ground down from the front, I think it would be a valuable thing. I consider it an excellent suggestion of my predecessor on the floor that these porcelains be supplied. I would be glad to see them.

Dr. Meeker. Mr. President; the remarks of Dr. Brockway and Dr. Hodson on caps reminds me of a method that I have

been using for some time, using the contour or veneer teeth kept by the S. S. White Company, which are probably about the finest that are made. Where I have a lower or upper molar with the sides all broken away I take one of these contour teeth appropriate to the size of the cavity and grind it down if it is too large, then with a pair of pliers I squeeze the long pins tightly together and give them a turn over, and that makes a very strong anchor for the amalgam. Then I fill it with amalgam and press it down. So far it has worked to a charm. I formerly used these little pieces like small collar buttons, but they were too clumsy and too large; you had to grind them down too much. When these veneer teeth came out I thought they were a good thing. I have used them a little in some bad cases where I used copper amalgam, and so far as I have seen they have done good service.

Dr. Hodson. Perhaps I did not make myself understood as to the kind of cavity I was speaking of. I was speaking especially and only of cervical cavities. Those are the ones that are the most aggravating in showing gold in the front of the mouth, cervical cavities where we cannot get much depth. If we could get sufficient depth of cavity there are twenty ways in which we could get good anchorage of the porcelain, but with these tiny labial cavities it is extremely difficult to apply the pieces of porcelain.

Dr. Walker. Mr. President, in regard to the specimen that Dr. Palmer has sent here of the labial cavity in the cuspid-tooth, I don't see why he goes to all that trouble to get that piece of gold and fit it to the cavity and put it in with cement, when it would be very much easier to fill it with foil, if that is the average size of cavity that he fills in that way. I don't see how it is possible to fit a piece of gold in one of these cavities and put it in with cement so as to have it stay there. I have thought a great many times when I have had the pleasure of presiding at the meetings of the First District Dental Society of New York, that a paper should never be read except by its author. There are a great many things in the Doctor's paper which I would like to ask him about, but he is not here, and that part of it we lose. I cannot see why he should put a piece of gold over that amalgam filling, I don't understand that. If it is an old and played out filling what would be the matter with taking it out and putting in

another? It would take me half a day to place a piece of gold on top of an amalgam filling like that, and then run the chance of breaking it out. Dr. Palmer is an old friend of mine, he lives in Syracuse and I have lived in Rochester, I have known him since I was a child, and I am surprised that he should send a paper of that kind here. As far as this cavity in the cuspid-tooth is concerned, I would a great deal rather fill it with gold.

Dr. Osmun. I don't see what was the necessity for taking the tooth out at all. We don't take out such teeth down in Newark. A number of ways suggest themselves in which to save it; it could be banded and filled with amalgam, or it could be crowned in various ways. Most of the dentists in Newark would take out that filling and put in something else. It is somewhat embarrassing to discuss a paper in the absence of the man who wrote it, one does not like to pitch into a man's paper behind his back, and I feel a little delicacy and hesitancy about discussing this paper when its author is not present. This piece of work in the central is done very nicely, but it is really a question whether he could do that in the mouth with the blood oozing from the gum, whether he could put that in with cement and make it stick. I have seen a good many crown and bridge pieces that were made in the laboratory, and that fitted accurately, but I have rarely seen them in the mouth. I think it would be a very difficult operation unless there was a good deal of recession of the gum, to fit a piece of plate in there like that.

Dr. Watkins. I don't think Dr. Palmer sent that paper for the purpose of illustrating the kind of cavity that he would fill in that way, but rather to illustrate his method, and it was probably a tooth that happened to be at hand at the time. I don't think Dr. Palmer would fill that kind of a tooth in that way. And we do not know what the tooth was extracted for, there may have been a good reason for the extraction. As to the other tooth I cannot see why he should fill it in that way, why he didn't take out the amalgam filling and put in a new one. Copper amalgam would have been excellent there, but he did it in that way and it saved the tooth, as he says for eight years, and he did it without removing the filling and running the risk of exposing the pulp. His idea in filling in this way is to save teeth which are almost entirely broken down. I think that in the absence of the

reader of the paper it is difficult to discuss it intelligently and get its best ideas, but I have gotten a good many ideas from it, together with a conversation which I had with Dr. Palmer some time ago.

On motion of Dr. Pinney the paper was passed.

IOWA STATE DENTAL SOCIETY.

HELD AT IOWA CITY, MAY 1, 2, 3 AND 4, 1888.

The Iowa dentists celebrated the twenty-fifth anniversary of their State society at Iowa City on May 1st, 2d, 3d and 4th. The attendance was unusually large, some two hundred dentists being in attendance. The meeting was held in the halls of the dental school of the State University. There were present from abroad, among other prominent men, Dr. Geo. H. McCausey, of Janesville, Wis.; President William N. Morrison and Secretary William Conrad of the Missouri State Society; Edward H. Angle and T. E. Weeks, of Minneapolis; W. H. Taggart, of Freeport, Ill.; H. S. Chase, of St. Louis; W. H. Parsons, of Wamego, Kan.; E. B. Call, of Peoria; C. C. Carroll, Meadville, Pa.

The president, Dr. W. P. Dickinson, of Dubuque, and other officers were all present, and from the first business was dispatched rapidly. President C. A. Schaeffer of the State University welcomed the association in a brief address, in which he spoke of the remarkable advancement of the science of dentistry and the encouragement for the future. Dr. J. T. Abbott responded for the society. President Dickinson delivered his annual address, which was a strong paper. He attributed the present high position of the profession largely to associated efforts, dental colleges, a literature adapted to our needs, and legal enactments. The speaker elaborated upon these propositions, tracing the history of dentistry, the establishment of dental schools and the progress in securing laws beneficial to the profession. Alluding to the "New Departure," he said that it had been the means of giving us better materials for use and bringing about "the therapeutic age of dentistry." The address was very well received and was so satisfactory that it was passed without discussion. The work of the session was well divided, the fore-

noons being devoted to clinics and the afternoons and evenings to papers and discussions. The clinics were very valuable and had been arranged by Vice President A. O. Hunt, of Iowa City, who was the superintendent, and to whom credit is due not only for their success, but that of the entire meeting. Among the most important clinics we mention the following :

CLINICS.

Wm. Conrad, D.D.S., St. Louis. Immediate root filling. The case operated upon was first right inferior molar, a very difficult case and one that would fairly test the method. Incipient abscess was the diagnosis. Hydrogen per-oxide was forced into the canals which were nicely opened with broaches and a Morey drill. The roots were then filled with chloro-percha and gutta-percha points. The operation was skillfully and deftly performed. The report of the patient after the lapse of twenty-four hours was no soreness in the parts and comfortable. The operator showed fully the importance of careful manipulation in operations of this character, and if the proper care was used success would be doubtful only in a very few cases. The reasons for the few failures would be inaccessibility.

F. M. Shriver, D.D.S., Glenwood, Iowa. Diamond drills and chisels of his own make. The operation of these instruments was highly satisfactory to all. Their uses are well known to the profession. The feature of those exhibited was the nice way in which the diamond chips were mounted. The chisels are perhaps a new feature entirely in dentistry. They turn down with ease the hard Arkansas stone in the form of wheels or disks for stoning burs.

C. C. Carroll, M.D., Meadville, Pa. Aluminum cast plates. The doctor not only gave a clinic but a clinical lecture, giving in this lecture the practical features of casting aluminum into dental plates ; also a scientific lecture on the metal aluminum ; the doctor having been at the work of experimenting with this metal for a period of twenty-five years or more, was able to give much information in regard to it that has not, as yet, appeared in print. The value of the metal for dentures must yet be tested to be generally indorsed, yet everything in relation to the work and metal as presented would seem to leave no doubt in the mind of any one as to its permanent value. The great feature of the clinic lay in the

fact that the aluminum could be soldered. This Dr. Caraoll did. It is a discovery of his own, and through him the dental profession will receive the credit. Many efforts have been made to accomplish this with only failure resulting.

S. A. Garber, D.D.S., Tipton, Iowa. The use of Perry separators. Dr. Garber showed the great advantage of these separators in making examinations in the interspaces between the teeth. Being adjusted in a few minutes, an easy and quick method was thus obtained for such examinations.

J. Hardman, D.D.S., Muscatine, Iowa. The use of a new molar forceps. The new feature of this instrument lies in its being adapted to either side of the mouth, giving a good view of the tooth to be extracted.

Edward H. Angle, D.D.S., Minneapolis, gave a clinical lecture exhibiting some twenty to thirty models covering a large class of irregularities of the teeth. On each model was adjusted an appliance suitable to each condition presented there. The principle of unrelinquished pressure and a positive method of retaining teeth in place after moving, also the simplicity of the appliance was carefully presented and its advantages fully explained. This feature of the clinics was most heartily appreciated by all present.

A. R. Begun, D.D.S., Cedar Falls, Iowa, showed a nice method of getting correct articulation for crown work, and by the use of dies demonstrated how to reproduce the impress of occluding teeth perfectly; also a method of treatment of teeth with imperfect crowns for implanting and transplanting.

Wm. N. Morrison, D.D.S., St. Louis, Mo. Contour filling with platinum and gold filling. The operator's well known and long established ability in the way of operations was demonstrated by him at the clinic.

A. W. McCandless, D.D.S., Davenport, Iowa. An appliance for the combination of ether with nitrous oxide by a device placed midway between gasometer and inhaler.

W. P. Dickinson, D.D.S., Dubuque, Iowa, demonstrated the various advantages of the Parr separator. All were much interested in the clinic and gained very valuable points in the use of such appliances.

F. M. Shriver, D.D.S., Glenwood, Iowa, showed his usual skill in making a bridge composed of two teeth and two crowns. The

result obtained by the operator stamps him as an expert in this class of work.

W. H. Taggart, D.D.S., Freeport, Ill. Making corundum points. Too much cannot be said in praise of this clinic. The device used is so simple and yet so accurate when the operation is completed, one is surprised at the beauty and finish of the disks and points all mounted and ready for use, they being perfectly centered.

C. Thomas, D. D. S., Des Moines, Iowa. Land's System of Porcelain fillings. This clinic was interesting to nearly all present, the demonstration being witnessed for the first time. The making of porcelain fillings and crowns by the Land System has been read about but not generally seen by members of the profession. The result obtained in an artistic sense can not be overestimated. They are beautiful indeed. As to utility, time can alone demonstrate this.

W. H. Baird, D. D. S., Burlington, Iowa. Gold filling with hand mallet. The operation was very good.

T. E. Weeks, D. D. S., Minneapolis, Minn. This gentleman brought his "bowl" with him and emptied it of its contents for the benefit of the society. First, there was an automatic rack for table drawers, that lifted pluggers or the instruments up in such a manner as to bring each one in view as the drawer was pulled out and placed them in such a position as to be easy to get at in time of need. When the drawer was pushed in, the instruments dropped back nicely in drawers. Next there was a modification of the Hewitt Matrix with a spring attached. Next a root clamp that would adjust itself nicely to place. Next there was a set of rubber dam clamps that were so constructed that they protected the rubber from contact with disks or sand paper strips. Also an abscess syringe, the device of Dr. Jenison, of Minneapolis.

Dr. Weeks demonstrated a method of wrapping a tooth for crown work, and any other small case of porcelain, in a portion of asbestos felt. The felt was wet with water, wrapped closely about the tooth and tied with wire to prevent it from unrolling. Heat being applied from below, the case resting on charcoal, by the time the moisture was driven out of the felt the case could be soldered. This is a very ingenious method and saves much

time while it answers every purpose of protection to the porcelain.

He also gave a very nice demonstration of closing the joint between the tooth and band when using the Logan, Bonwill, Brown or Rubber tooth with gold collar or band in crown work. This was done with white enamel, which is fused just below the fusing point of 18 carat gold solder or plate. It secures the result nicely. The enamel adhering closely to both gold band and tooth substance. It is applied somewhat after the manner of borax cream in soldering. The enamel being ground to an impalpable powder in an agate mortar. When reduced to this condition it can be easily mixed with water and put in place with a camels hair brush or sharp pointed stick. It is used on the inner or root side or end of the crown, after it has been adjusted to its place in the mouth and carefully removed. Here the use of the asbestos felt is invaluable, saving so much time.

W. B. Ames, D. D. S., Chicago, Ill., gave a hurried talk on the uses and benefits of copper amalgam, as well as a description of the method of its manufacture. Dr. Ames was obliged to leave on the morning train, and the time allowed him was taken from the evening allotted to Dr. McCausey, hence there was no discussion on the subject of copper amalgam.

Dr. Ames also exhibited Dr. Freeman's Clamps, which were very generally praised and appreciated.

Dr. Coyle, St. Louis, Mo., was present and gave an exhibition of crown stamping, using dies specially made for the purpose.

Dr. E. B. Call, Peoria, Ill., gave an exhibition of the use of a Hot Air Dryer of his own device. It is very simple and practical.

Dr. Parsons, Wamego, Kansas, presented a Warm Air Injector and Saliva Ejector, also a battery to work the Injector, an instrument for obtunding sensitive dentine, an Oral Lamp and plugger.

J. A. Leonard, D. D. S., Sigourney, Iowa, was present with a Galvano-Faradic Battery, explaining its use and merits to attentive listeners.

Dr. E. R. Mullett, Clinton, Iowa, is one of those who always have something good to bring to the meeting beside himself. His exhibition of an Electric Plugger, designed to be operated by a water motor instead of the battery, called forth much attention.

Messrs. Cusick & Coale, representatives of the Belding Motor Co., were present with a motor for running a dental engine or lathe.

In conclusion too much can not be said for those operators and gentlemen who throughout the clinic days were constantly at work with their specialties. That their efforts were fully appreciated goes without saying, as at no time was the operator without an audience.

With but one or two exceptions the programme was carried out fully and for those cases where it was impossible to carry out fully the intention, there were those, whose names did not appear on the programme, ready and willing to fill their place.

PAPERS AND DISCUSSIONS.

The papers read and discussions were most highly appreciated.

Dr. J. F. Sanborn, of Tabor, during the first day, read a paper on "Histology as a Fine Art," in which he presented many valuable suggestions, but nothing so new as to provoke discussion and the paper was passed.

The same day Dr. C. E. Peterson, of Dubuque, in a paper on "Why," brought out many interesting thoughts. The production considered questions "that tend to our complete development physically, intellectually and morally, as well as professionally. All these are factors in the making of the dentist, when the term is applied in its full ethical sense. Dentists should not be discouraged by failures, but they should seek to know why they occurred. Why are we not making more improvement and better use of our time? Is it because we are lazy or careless? Are we trying to do too much, or are we doing too little? One draw-back, one 'why' is because we have not been thorough. We have not benefitted enough by the past experience that is in the reach of all. How to use and what to use is the problem. This has been discussed by men of wide and varied experiences." He then spoke of the care needed in the treatment of cases. The care of the teeth by the patient is of great importance and we should emphasize it. We are daily getting new appliances and new methods, but should move slowly until we know they are better than the old ones. There should be patient, earnest, persevering effort. We need not desire to do great things, but little things are what count, as the poet says :

"I give you the end of a golden string
Only wind it into a ball,
It will lead you in at Heaven's gate,
Built in Jerusalem's wall."

This paper was discussed by Dr. Abbott, who said he thought it was "an incentive to action to the younger members."

Dr. Cochran said that it taught us all to keep our minds on our work to succeed.

Dr. J. A. Taylor was pleased with the paper and said so in a brief speech; Drs. Morrison, Rogers, W. O. Kulp, Hunt, and others also spoke on this subject.

On the first evening, owing to the absence of Dr. G. V. Black, of Jacksonville, Ill., who was to have read a paper on "Studies on the Structure of the Enamel, with Reference to Finishing the Margin Preparatory to Filling." Dr. C. C. Carroll, of Meadville, Pa., lectured on Aluminum and its uses in Prothetic Dentistry." An aluminum automatic gas furnace, flask and pneumatic crucibles were used by the doctor, and his address was an explanation of his system of casting crowns, bridges and dental plates, partial and complete, with prepared chemically pure aluminum bases. He claims that the method, which was invented by him, is one of great simplicity and can be used by any dentist of average skill. The doctor proceeded to make a crown, which he did very rapidly and satisfactorily, putting his theories into practice before the audience and explaining everything as he went along. The dentists present seemed well pleased with the exhibition, and upon adjourning complimented the doctor, whose invention has given him wide reputation. There were many questions asked of the lecturer in relation to the manipulation of the metal and its peculiar properties in casting, and they were explained very carefully and satisfactorily.

On the second day the features were the papers by Dr. A. Wood, of Iowa City, and Dr. L. C. Ingersoll, of Keokuk. Dr. Wood's subject was, "How can we best Promote the Development of Dentistry?" A brief synopsis of what he said follows: "As mile-stones in the progress of the profession are dental societies, dental schools and State laws regulating the practice, as a result of these is an ever-increasing better qualified class of practitioners and a growing confidence in them on the part of the public. There is still hope for great advancement as to methods and

materials in saving the teeth. Considering the present status of the profession, I believe the most promising field, now, in which to promote the development of dentistry, is the public schools. That is, to secure the thorough teaching of the principles of hygiene and their application. It is conceded by the intelligent physician that a large part of the common diseases can be avoided by the average individual if properly instructed in regard to their causes and prevention.

It is true hygiene is taught in our schools; but usually only one term is given to the subject of anatomy, physiology and hygiene, and generally very little time is given to the last. Very many of the most common facts respecting health and disease, and which should be familiar to every one, are entirely omitted from the best books on the subject in common schools.

I maintain that a thorough knowledge of hygiene, such as may be readily understood by the pupils in their "teens," would largely conduce to raising the standard of the general health; and that, as the general health is improved the quality of the teeth will be raised, and especially with an intelligent care of the teeth. What does one learn at school that is of more importance than how to avoid the causes of disease? and if sick how nature and the physician can best be assisted toward recovery?"

Dr. Wood's paper met with hearty response. Dr. Rogers, of Ottumwa, in a brief address, discussed and endorsed it, and others spoke in the same vein.

Dr. Ingersoll gave "A talk on new and original illustrations of the tooth pulp as a ganglion." The main feature of his paper was that the dental pulp was a ganglion, or that there is a continuation of the dentinal fibril passing from the dentine without break of continuity. The doctor claims this as an original idea.

On the second evening Prof. C. C. Nutting, of the State University, lectured in the Science Hall on "Teeth from a Zoological Standpoint." He said in brief:

The study of the teeth was interesting to zoologists. By this the feeding habits of animals could be determined. Prof. Nutting commenced to illustrate his lecture by exhibiting shark's teeth. He drew a sketch of them on the blackboard to show how they were shaped and how they were well adapted to serve the purpose of the shark in seizing and destroying its prey. Its teeth

were not attached to the jaw but to the membrane. The next exhibit was that of a saw-fish. The lecturer stated that that dweller in the deep by swinging its teeth from one side to the other in the ocean, cut the small fish around it in pieces and then devoured them.

The next exhibit was that of an alligator's jaw, the teeth in which, the lecturer considered in an interesting manner. He showed that they were of irregular length, and thus enabled the animal to more securely hold its prey.

Prof. Nutting then proceeded to consider the teeth of mammals. He exhibited the skeleton of a duck-billed mole, which is a connecting link between the fowls and the animals. It displays no teeth except in its embryonic state. The same is true of whales. One peculiarity of the duck mole was that it laid eggs.

Prof. Nutting exhibited the skull of a porpoise and of other animals of the same class, and in referring to their teeth had occasion to speak of the crowded condition of the masticators. This led him to the question of milk teeth. He believed that they were the result of this crowding together of so many in the jaw. Having just dissected the skull of a young wolf, he drew a diagram of it on the blackboard which showed the same fact. Hence the existence of the milk teeth.

The next class discussed was the rodents, whose prominent characteristic is their incisors. He referred to the peculiar teeth of rats, rabbits, squirrels, etc. There was great strength in the teeth of these animals. The incisors were kept sharp by attrition. If broken, so that they could not meet, the animal would starve. In speaking next of hoofed animals, he said, there were two corollations. One was that the teeth and feet were parallel. The tapir was cited as an illustration. The other was that animals having horns lacked canines and vice versa. Ruminating animals, or such as chew the cud, had no canines, the camel alone being an exception.

The lecturer in referring to the human teeth said that in all probability the man of the future would have fewer teeth than the man of the present.

The predatory animals were next discussed, the jaw of a lion being exhibited. The peculiarity of the teeth of that ani-

mal in their adaptation to sink deep into the flesh of its prey was pointed out.

Then followed the description of an elephant's tooth.

We have merely outlined the plan of the lecture. At its close it was loudly applauded. Pres. Dickinson thanked the speaker, in behalf of the audience, for his highly instructive discourse on the subject presented. A few questions were propounded which Prof. Nutting answered. He cordially invited the members of the Dental Convention to visit the Museum.

Prof. Nutting is a very entertaining speaker, and so divested his lecture of technical terms that all could understand and appreciate it.

The third afternoon was a rich treat, one of the pioneers in Iowa dentistry, Dr. H. S. Chase, of St. Louis, reading a paper on "Primitive Dentistry in Iowa." From the outset the doctor kept the Association in laughter. He told of his early adventures in a very humorous manner, and at the same time weaved in many historic facts. Concerning the efforts to organize the Iowa Society he said: "He and Dr. Kulp wrote to the dentists of Iowa about forming a society, but a majority opposed it. 'Too soon,' some said; 'too scattered' others said; 'I don't believe in societies; I've had hard work and spent lots of money to learn what I know, and don't propose to tell it to a lot of other fellers for nothing.'" Dr. Chase said that he wished that he had kept all those letters, but he always "burned all letters, even love letters." He described his trip to Muscatine in a buggy, "with a peck of oats in a bag for 'Tom,' and a wooden sugar box containing a good lunch put up by 'Sallie.' 'Sallie' was my wife. She is now. At noon 'Tom' and I ate our lunch. Dear old Tom; we were friends indeed; many a time have I kissed him; he was white, about fourteen years old, with a short tail, amputated before I knew him." At Wilton he "left" old Tom to refresh himself and get acquainted with Wilton horses, and he went to Muscatine by rail. He found eight dentists there, including Tulloss and Coulson, of Iowa City. A Society was organized. Dr. Chase says: "I elected myself President, and the other fellers took whatever they could get. We adjourned to meet at Iowa City, January 20, 1864." Dr. Coulson, of Iowa City, offered to sell his practice, and Dr. Chase says: "So I went back

to Independence by way of Iowa City and fell in love with the town."

Dr. Chase said that the second meeting of the Society was held in Iowa January 20, 1864. Dr. Tulloss was elected President, and the meeting was held in the University building. The original members, Kulp and Hardman, of Muscatine; Tulloss and Coulson, of Iowa City; Smith, of Tipton; Newell, of Davenport, and Chase, of Independence, were present, and about twelve others. The next meeting of the Society was held at Des Moines, January 4, 1865. More members were added, including Hallett, Fuller, Jackson, Sanborn and Ingersoll. The latter was elected President. The fourth meeting of the Society was held at Dubuque, July 18, 1865. The fifth meeting was held in Burlington, in July, 1866. Dr. Kulp was elected President. In July, 1867, the Society convened at Lyons, and Dr. Sanborn was elected President. In April, 1865, Dr. Chase bought out the practice of Dr. Coulson, of Iowa City, and removed with his family to that place. In August, 1865, he attended the meeting of the American Dental Association in Chicago, and became acquainted with St. Louis dentists, which led to his removal to that city (St. Louis) in 1867.

Then came the report, read by Dr. I. P. Wilson, of Burlington, Chairman of the Committee on the History of the Society. He traced the Association from 1863 to 1872.

While the report consisted largely of routine business of the association from 1863 to 1872, as far as he brought it, there were many valuable historic facts brought out. Among them was the election in 1865, as member of the society, of a lady dentist, Miss Lucy B. Hobbs, who is now a Mrs. Taylor, living in a Western State. In one meeting in choosing a Vice President, a member named Ray was elected, but there were twin brothers of the name present. The society didn't know which was being voted for, neither wanted the office and refused to give their first names, so the society elected both to the office and the records show "for Vice President, the Ray Brothers." Dr. Wilson said in examining these brothers, one was smarter than the other, and he first examined the smarter one, who passed nicely. Ray went out and the other brother, as Dr. Wilson supposed, came in and also passed well, but the doctor found out after-

wards that he had quizzed the same Ray twice. The history of the various steps taken to found the Dental School of the University was also outlined.

Dr. A. W. McCandless, of Davenport, next read his paper on "Nitrous Oxide Gas and its administration." The subject was exhaustively discussed from the discovery, purity and manufacture of the gas, and included the discussion of its combination with ether for prolonging anæsthesia in extended operations. He also touched upon the care of the patient, instruments to be used, safety compared with other anæsthetic agents, and quoted a letter from a Philadelphia firm who had administered the gas over 150,000 times without accident. The discussion was participated in by Drs. Allen, Wilson, Conrad, Weeks, Wade, Derr.

The third evening, Dr. G. H. McCausey, of Janesville, Wis., read a paper on "Epulis, what is it? Its pathology and diagnosis."

It was an able paper and was technical in the extreme. It was briefly discussed by Drs. James and Weeks. The doctor also in connection with his lecture and illustrative of the same, gave an exhibition of specimens under the microscope. Before this exhibition time was taken to give Dr. Ames, of Chicago, an opportunity to present some views as to copper amalgam, the doctor being obliged to leave on the early morning train. He gave a very fine showing of the benefits and use of the amalgam and many good points of interest in the matter of its manufacture.

On the last day, the association listened to several interesting papers. Dr. E. D. Brower, of LeMars, considered "How can we best serve our patrons?" in which he gave a general review of dentistry and brought out many good suggestions. Dr. J. T. Abbott, of Manchester, in a few remarks endorsed the paper.

Dr. A. C. Kellogg, on "Diagnosis," brought out the idea that attention should be called to the necessity of careful preparation on the part of the dentist. It was a very well written paper and well read.

Dr. Hunt, in discussing it called out and criticised the hurry that seemed to prevail to get over the paper. He said that for a young man the paper was noticeable in that it was cautious, progressive and stimulating.

Drs. Barber, Conrad, and McNutt, also spoke in a favorable vein.

Dr. R. L. Cochran, of Burlington, read a spicey paper on "Are the natural teeth saved at the expense of health and life?" The doctor took the ground that many dentists were not as careful as to cleanliness about their office, and especially in the use of instruments, as they might be, and that by such carelessness and lack of the use of antiseptics germ diseases were transmitted.

A spirited discussion followed the paper, Dr. Hunt, while agreeing in the main with Dr. Cochran, claimed that the latter's charge should not be so sweeping. Dr. McCausey also made remarks on the paper.

Among the other papers read were those of Dr. J. Foster Flagg, on "Amalgam and Soft Gold," and of Dr. J. J. R. Patrick, of Belleville, on "Irregularities." As both writers were absent, the papers were read in capital style by Dr. Cochran, and brought out more or less discussion.

MISSOURI STATE DENTAL ASSOCIATION.

At twenty-fourth annual meeting, Pertle Springs, July 10-13, officers elected for 1888 and '89: President, Dr. B. Q. Stevens, Hannibal, Mo.; 1st Vice-President, Dr. T. W. Reed, Macon, Mo.; 2d Vice-President, Dr. W. E. Tucker, Butler, Mo.; Recording Secretary, Dr. John G. Harper, St. Louis, Mo.; Corresponding Secretary, Dr. William Conrad, St. Louis, Mo.; Treasurer, Dr. James A. Price, Weston, Mo. Board of Censors, Drs. J. B. Newby, St. Louis, A. H. Thompson, Topeka, J. G. Hollingsworth, Platte City. Committee on Ethics, Drs. E. E. Shattuck, Kansas City, W. H. Buckley, Liberty, J. W. Whipple, St. Louis. Publication Committee, Drs. W. H. Eames, A. H. Fuller, Geo. A. Bowman, St. Louis. Committee on Law, Dr. James A. Price, Weston, Mo. Executive Committee, Drs. E. E. Shattuck, H. S. Lowery, J. W. Aikin, Kansas City. Next annual meeting, first Tuesday after July 4, 1889, Pertle Springs, Warrensburg, Mo.

Hotel Beers.

WM. CONRAD, Cor. Sec.

The Northwestern Dental Association held its annual meeting at Fargo, Dakota, Friday, July 21, 1888, Dr. J. W. Cloes, of Jamestown, Dakota, presiding. An interesting session was held. The following named officers were elected for the ensuing year: President, Dr. J. W. Cloes, Jamestown, Dakota; Vice-President, Dr. S. P. Johnson, Grand Forks, Dakota; Secretary, Dr. S. J. Hill, Fargo, Dakota; Treasurer, Dr. C. B. Davenport, Larimore, Dakota; Superintendent of Clinics, Dr. H. L. Starling, Fargo, Dakota; Executive Committee, Dr. S. J. Hill, Fargo, Dakota; Dr. L. C. Davenport, Moorhead, Minnesota and Dr. B. F. Manning, Fargo, Dakota. Detroit Lake, Minn., the famous summer resort of Northern Minnesota, was selected for their next meeting on the fourth Tuesday of July, 1889.

THE DENTAL REVIEW.

Devoted to the Advancement of Dental Science.

PUBLISHED MONTHLY.

EDITOR: A. W. HARLAN, M.D., D.D.S.

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LOUIS OTTOFY, D.D.S.

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AMERICANS IN ENGLAND.

Our esteemed contemporary the *Journal of the British Dental Association* in the July issue says very justly that scientific dentistry knows no country, and deplores the fact that unscrupulous and mercenary individuals are forming limited liability companies in England on the pretext to furnish the Britisher with "American dentistry." It is deplorable that a certain class of men, regularly graduated from some of our best dental schools in America, will lend themselves to these "institutes" now springing up in London, and in so doing, not only degrade themselves and bring reproach upon the colleges certifying to their fitness to practice, but drag in the dust the reputation so hardly gained by our best men in foreign countries.

Ethical principles are totally ignored by them, and it would seem that the best thing that all respectable Americans could do, would be to give them the cold shoulder, not alone in professional, but in private life as well.

This stigma it is hoped will be frowned upon by the English medical council and the prosecuting committees of the British dental association so forcibly, that permits to practice the art and science of dental surgery will not be issued by the authorities, unless the holder of the legal right can show his respectability in a manner so satisfactory, that no one will have cause to blush when a dentist is known to have hailed from the United States.

We are opposed to quackery both at home and abroad, and hope to see the day when the old practitioner as well as the recent graduate, will be found to say that his practice was built upon merit and respectability, and not upon the lavish use of printers' ink, misrepresentation and fraud.

THE JOINT MEETING.

So much has been said about the joint meeting of the Southern and American associations that it would seem needless to say more at this time, however, we most earnestly urge our readers to attend and do all they can in making this the most notable dental gathering of the year 1888.

Many previous efforts have been made to gather the members of these societies in joint session at a convenient place, but until now all have failed for various reasons. We predict a profitable and largely attended meeting in Louisville.

SCHLENKER'S PAPER ON CRYSTAL GOLD.

We call the special attention of the readers of the *REVIEW* to M. Schlenker's article on crystal gold, which was commenced in the July number and is finished in this issue.

Perhaps at no time in the history of dentistry is the demand as great as at present, for a kind of gold which may be introduced with ease and rapidity. A plastic is wanted, and that plastic should be gold. Undoubtedly the introduction of many of the plastic amalgams and cements as filling materials, is in a great measure, due to the difficulty and time required to manipulate gold. The average practitioner, in most cases, could introduce gold instead of amalgam at so slight an advance over the cost of alloys, and he would gladly do so, his patient would pay the additional cost were it not for the want of time. When the time necessary to introduce gold is considered, the expense of gold filling increases.

Manufacturers are casting about for some method of preparing gold to supply this want. The crystalloid gold put on the market recently by Williams, is the outcome of a desire to supply an absolutely plastic material, one which requires the least time and skill to make a good filling. While Schlenker expresses much admiration, and lavishly praises the preparation of Nedden, he is in no way interested in its manufacture or sale. His reputation as an author is unquestioned among German readers, and his standing as an experimenter, an expert with the microscope, and photo-microscopy is unusually high, hence we are led to give his opinion more weight than we might otherwise do. Some of

his methods of filling cavities are quite ingenious and unique. We have used Williams' crystalloid gold but not to an extent to warrant an expression of opinion as to its merits; we have also sent to Switzerland for some of Nedden's crystal-gold and shall give it a trial. The results of our experience will be expressed in the pages of *THE DENTAL REVIEW*.

WISCONSIN STATE DENTAL SOCIETY.

The eighteenth annual meeting of this Society, held at Milwaukee, July 17, 18 and 19, was one of the best in recent years. The meeting fell short by want of clinics, however, it more than made up in the reading of papers, delivering of lectures and in discussions. The society has acted commendably by encouraging literary efforts among its own members, as all the papers read were by men who reside and practice in the state. Drs. Talbot and McCausey delivered interesting lectures, illustrating them with original drawings and photo-micrographs. We recommend the executive committee to set about immediately, and make preliminary preparations for the next annual meeting, and also that arrangements should be made to be positive of having clinics next year. The attendance (50) of members and visitors was, when compared with the number of dentists and attendance at societies in other states, quite up to the average, which can undoubtedly be increased, if the programme as published next year is carried out to the letter. The following officers were elected for the ensuing year: President, W. H. Carson, Mineral Point; 1st Vice-President, E. C. French, Eau Claire; 2d Vice-President, E. H. Long, Black River Falls; Secretary, C. A. Southwell, Milwaukee; Treasurer, B. Douglass Appleton. The next meeting will be held in Milwaukee on the third Tuesday in July, 1889.

The joint meeting of the American and Southern Dental Associations promises to be largely attended. The editor of the *Southern Dental Journal* is doing all in his power to bring out all the leading dentists of the South and every journal in the North so far is pushing the matter. Come out and bring your papers and new inventions.

DOMESTIC CORRESPONDENCE.

COCAINE TOXÆMIA.

To the Editor of the Dental Review :

DEAR SIR :—In the June number of your Journal, in the report of the Illinois State Society meeting, it is hinted that Dr. Pruyn in exhibiting the value of cocaine, also unintentionally proved its danger, in as much as some alarming symptoms were apparent in one patient. Truly, as Dr. Atkinson would say, "The angels guard the dentist." It is admitted that toxic effects from this drug are rare, and yet a case occurs at a public clinic in the West, and close after we have a similar experience in the East. I attended the New Jersey State Society meeting at Asbury Park recently, and I could fill this letter with choice bits anent the same, especially of the beautiful papers by Drs. Sudduth and Codman (but they will be printed), only I have placed a headline over this, and must adhere closely to the text of my sermon, for sermon it is to be. It is time that the cocaine alarm be sounded, and I hope the echo will ring through the dental journals, till it reaches the ears of all the dentists in the land.

Dr. Kirk and Dr. Curtis were down for clinics on implantation. Of the first there is little to say (in connection with my subject) save that he claimed to use a 50 per cent. solution, and to limit the dose injected to one eighth of a grain. It was subsequently questioned whether so strong a solution could be made, it being stated that one to two (33 per cent.) is saturate. Dr. Kirk insisted that his druggist prepares his solution in the proportions named.

Dr. Curtis implanted a left lower molar. So far as the operation is concerned it can but be admitted that the doctor is very skillful and did his work to the admiration of all about him. But it is the cocaine end of it that I am after. He used a 25 per cent. solution, and injected about five minims, twice. In about five minutes the patient (a dentist) began showing marked signs of uneasiness; asked if he felt any pain replied "No, But I feel the cocaine going all through me." At ten minutes complained of tingling sensations, and anxiety increased so that it became difficult for him to remain quiet, drawing up and stretch-

ing out his limbs alternately, beating the arm of the chair with his hand, and emitting sounds between a sigh and a groan. In fifteen minutes a cold perspiration stood in beads on his forehead, and in answer to a question I put to him, said that he felt as though under the influence of gas. Shortly after this a relaxation of all muscles occurred and patient seemed almost in a state of collapse. This was the worst point of the paroxysm and toxic symptoms gradually subsided thereafter. Dr. Curtis continued the operation, allowing occasional rests, and patient reported little if any pain.

This experience and the case reported at the Illinois clinic should alone suffice to warn dentists, that cocaine is not the safe drug it has been reported to be. But it will be best for me to give you a slight view into the history which has already been compiled on this matter. Dr. J. B. Mattison, 314 State St., Brooklyn, is the man to whose indefatigable efforts both professions owe a debt of gratitude, in that he has compiled the records of more than one hundred and thirty cases of evil results from the use of cocaine. His two papers, "Cocaine Toxæmia" and "Cocaine Dosage and Cocaine Addiction" have already been reprinted in 17 medical journals, at home and abroad. Is it not time that some of this valuable history should creep into the literature of our profession? With your permission I will make a few quotations.

"Dr. W. H. Long, U. S. Marine Hospital Service, reports in the *American Lancet* the case of a man aged thirty-three, to whose larynx he applied, three times, a four per cent. solution of cocaine. Prompt relief was given but three and one-half hours after the patient was found unconscious; breathing labored; respirations, twenty; pulse, ninety; general condition one of profound anæsthesia. Diagnosis, cocaine poisoning. Several doses of whiskey were given subcutaneously. In half an hour, consciousness partially restored, then gradual and full improvement save a feeling of great exhaustion. Four days later cocaine was again used. Thinking the former toxic effects due to swallowing some solution, and probable absorption by the larynx, extra precaution was taken and the pharynx well rinsed. Two applications of a two per cent. solution were made. Relief was again complete, but three and one-half hours after patient was in same condition

as before, except the anæsthesia was not so profound. Frequent injections of whiskey were again used with partial success, could swallow and answer questions, but, soon after, he suddenly ceased to breathe. The heart beat a short time longer. All efforts at resuscitation failed. The probable immediate cause of death was paralysis of the respiratory centre due to cocaine."

I insert this case, First, because of its extreme bad result, second because of the smallness of the dose—*two per cent. solution, applied topically*—and lastly as a warning to those dentists who use cocaine freely in and about the mouth, that they hereafter use special care lest the drug get into the throat.

"Dr. F. M. Thomas, Leonardsville, Kansas, reported to Prof. Ogden Doremus, as follows:

"Friday morning, October 23d, 1885, I was called to see Mrs. ———, whom a messenger reported dying. I found her unconscious; breathing heavily and irregularly; pulse 35, intermittent; temperature normal; left pupil dilated, right natural; face spasmodically drawn upwards towards the dilated eye. Spasmodic action of the left arm and upper part of body came on regularly and at intervals of a few minutes, during which she clutched the bed-clothing, and seemed to be trying to vomit. Twice during my attendance she ejected small portions of previous evening's meal. Salivation was excessive; retained a dorsal decubitus; would not lie on either side. Heart seemed almost exhausted.

"I saw her at 5 a. m. and was with her nearly all the time till she expired, apparently exhausted, at about 8:30 a. m."

On inquiry the doctor found that Mrs. ——— had been using a four per cent. solution of cocaine rather freely, for toothache, due to several decayed molars, on left upper side. His diagnosis was cocaine poisoning.

There seems little doubt that this was correct; notice the dilation of left eye, the drug having been applied to teeth on that side. This should teach the danger of allowing patients to have this drug as I have known to be done in this city, by men of good repute.

"Dr. Knabe, of Berlin, records a case of a girl aged eleven, who was given four to twelve drops, the exact amount was not determined, of a four per cent. solution of cocaine, by injection over the deltoid to remedy frequent fainting fits, she having car-

diac degeneration sequel of scarlatina. In less than forty seconds the girl took a deep breath, became deadly pale, and dropped unconscious. One minute later she was dead."

"Dr. Schilling in the *Pharmaceutical Journal* records a case, in which the injection of six drops of a two per cent solution, into the gums of a woman aged twenty-six, to prevent pain of extracting a molar was followed by toxic symptoms, of which facial rigidity, deafness, blindness, complete loss of motion and sensation, and unconsciousness for half an hour were the chief. They subsided after inhaling nitrite of amyl."

"G. Bockl, observed alarming effects to follow the injection of six drops of a two per cent. solution, under the gum. In ten minutes patient became unconscious with fixed gaze, vision defective, and delirium. Nitrite of amyl gave relief."

"Dr. Edward Bradley, New York, reported this case. A professional gentleman in perfect health had a four per cent. solution freely used in filling a carious tooth. Toxic symptoms soon appeared the most noted being facial paralysis on the right side."

I stop this quotation at this point, for the reason that I have later information from Dr. Mattison about this case. I have been looking up cases myself lately, and am on the track of several that have escaped Dr. M. The gentleman here alluded to, however, is a neighbor, and I learn from him within a few days that the paralysis persisted for two years, about which time it had entirely disappeared. He tells me that a full report of the case was made at that time by him to the New York Odontological Society, and can be found recorded in the *Cosmos* early part of 1887.

"Schubert noted a case of a strong, healthy, non-nervous female, aged 28, in whose gums six minims of a 20 per cent. solution was injected before extracting a tooth. In ten minutes vision was impaired, gaze fixed, and she soon became quite blind and then unconscious."

"Dr. Walter Tothil, in the London *Medical Record*, reported a case of a girl in whose gums one grain was injected. In ten minutes she became unconscious, remaining so for two and a half hours. Another, male, aged 27, cocaine was applied in the same way prior to extraction. Within a minute he became violent,

his pupils enormously enlarged, pulse beating six times with each inspiration, face pale, with dark lines around mouth and eyes."

"Dr. George N. Monnette, in the *Journal of the American Medical Association*, noted three cases occurring in dental practice, in which two to four drops of a 20 per cent. solution injected in the gums caused vertigo, blindness, cold perspiration and inability to walk; completely unnerved, acted as if deranged."

"Addinsell cites two cases, one himself, after injection of one-half grain in gum prior to tooth extraction had extreme pallor, nausea, vertigo, quick, weak pulse, violent palpitation and chest thumping, suffocation, and general tingling and staggering gait, that persisted thirty-five minutes. Second case same amount injected, lady; very similar symptoms."

I have, in making selection of quotations, chosen cases which occurred in dental practice, as being nearer home to your readers. Dr. Mattison, in his two papers, relates many more marked than these, and of great interest in that the remedies used are given in detail. I have no doubt that the doctor will supply a copy of the reprint to any sufficiently interested to address him on this subject. He would be pleased to receive the relation of facts in any cases known to any one which is not recorded. I, too, should be specially indebted for similar contributions, as I wish this winter to present as complete a history of cases in dental practice as possible. It is important that all cases where death has supervened the exhibition of the drug, should go into the record.

A most important question is the antidote. Dr. Mattison, at the conclusion of his paper, says "nitrite of amyl and hypodermic morphia." Bear this in mind. Cocaine is a heart depressor; that is why nitrite of amyl is indicated, it being an excitant to a marked degree. In thirty or forty seconds, whether given internally or by inhalation, it flushes the face and increases the heat of the head and perspiration of the face and neck. Best used by inhalation, in small doses, two to five drops. Should not be used without first acquiring full knowledge of its peculiar effects, as it is dangerous. Other remedies for cocaine are subcutaneous injections of brandy, or carbonate of ammonia (five grains), ammonia, ammonia and digitalis, brandy and digitalis, given internally; hot sinapisms to the chest and epigastric region.

A few words more before I close. In this month's REVIEW

Dr. Arthur C. Hugenschmidt recommends hypodermics of antipyrine for pericemental inflammation. He recommends fifteen grains in fifteen minims of water, one-third of a grain of cocaine having been previously injected. I think, after reading even what I herewith offer, dentists will hesitate to use the cocaine, especially so large a dose. Let me warn them, also, against the antipyrine. It is a grand drug, but already the medical fraternity are calling a halt and using it more carefully. *Don't inject it.* Fifteen grains given internally is preferable from the standpoint of safety, and will serve with sufficient efficacy. I am speaking from personal observation. I have used it without a failure, though only a few times, for pericementitis, and once with marked success, as follows: Lady presented with aching tooth; pulp almost exposed, but no actual lesion discovered; capped and filled the tooth with oxy-phosphate. Next day tooth quite tender, though not elongated, and aching. Fifteen grains of antipyrine in half ounce water produced sleep in twenty minutes, and the tooth has not ached since, two weeks later. Nevertheless, I have ceased using antipyrine, and substituted antifebrin, which, I am assured by physicians, is safer and as potent. Have tried it with success. I asked Dr. Mattison for an opinion on this, and he thinks fifteen grains of antipyrine hypodermically might cause unpleasant results, and in connection with one-third of grain of cocaine is riskful, if not dangerous.

Yours truly,

B. A. R. OTTOLENGUI, M.D.S.

? ? ?

TO THE EDITOR OF THE DENTAL REVIEW:

DEAR SIR: In a short notice on page 314 of the *Items of Interest*, the statement is made that implantation was practiced prior to 1829. Is that true? I was under the impression that the operation was performed for the first time about three years ago.

Yours truly,

New York City, July 15, 1888.

D. D. S.

[This error is frequently made, and it is due to a confusion of terms; transplantation, replantation and implantation are entirely different operations. The two former having been practiced during the last century, but implantation is a recently advocated, wholly different operation. The first person to perform the operation, crudely, unscientifically and of course unsuccessfully, was Dr. Mitscherlich, a German dentist, in 1880 or 1881. To Dr. Younger, of San Francisco, is due the credit of introducing the subject scientifically to the profession. EDITOR.]

MEMORANDA.

Dr. J. W. Wassall has gone to Europe.

Prof. W. D. Miller, of Berlin, is in the United States.

Dr. Gustavus North is president of the Eastern Iowa Dental Society.

The local dental societies have adjourned until the "leaves begin to turn."

Dr. W. St. George Elliott finds it impossible to be at the Louisville meeting, much to his regret.

Dr. Thomas W. Evans, the famous American dentist, proposes to present to the City of Paris an equestrian statue of Lafayette, in bronze.

The B. & O. will give a rate of \$18.50 going to Louisville from New York' and \$7.17 returning. Sleeping cars \$4 to Cincinnati and \$5 to Louisville. Time 28 hours.

The Wisconsin State Dental Society will shortly republish their pamphlet, entitled, "Practical Information about the Teeth," which is intended for general distribution.

It is not considered "ethical" to keep a red-haired young lady in the operating chair until a white horse is in sight, immediately in front of the operating window.

Dr. Thomas W. Evans says that he has still under consideration the project of endowing a school and hospital in America, but has not as yet definitely made up his mind on the subject.

In 1880 Dr. A. S. Weber, of Havana, Cuba, transplanted a central incisor, which the patient purchased at the price of \$102 in Spanish gold. The tooth remained in the mouth five years.

Dr. Stoddard Driggs, of Lexington, Ky., is deceased. He was a member of the American Dental Association, and we believe the oldest practitioner in Lexington, since the decease of Dr. Talbert.

Dr. A. O. Hunt, of Iowa City, who, it was alleged, had misappropriated the funds of the Iowa College, has been triumphantly acquitted of such charge by a committee appointed to investigate the affairs of the university.

AMERICAN DENTAL ASSOCIATION,

The American Dental Association will hold its twenty-eighth annual meeting at Louisville, Ky., commencing Tuesday, August 28, 1888.

GEO. H. CUSHING, Rec. Secretary.

Dr. B. A. R. Ottolengui, 28 W. 26th street, New York City requests all who have knowledge of instances where evil results, temporary or permanent, have followed the use of Cocaine, to report same to him for compilation into a record to be given the profession next winter.

Some unmerciful and severe, but not unjust criticisms were freely extended to the representatives of the International Tooth Crown Co., at the Milwaukee meeting of the Wisconsin Dental Society. The flavor of the old Goodyear heirs' persecutions is too conspicuous to commend respect.

Dr. C. W. McNaughton, of Grand Rapids, who was a delegate to the International Women's Conference, held in Washington during April, has since then been

taking an extended trip through Europe, and returns this month. An article from her pen will probably appear in an early number of the REVIEW.

Dr. G. H. McCausey, of Janesville, illustrated his lecture on the "Minute Anatomy of the Teeth and their Connections," with very fine photo-micrographic tables. Dr. McCausey is making microscopic sections of implanted teeth for the purpose of studying the method of attachment.

In the *Therap. Monats.* Hénoque and Frédet recommend the application of ether to the face, immediately in front of and about the lobes of the ear. It is claimed that the trifacial nerve may thus be sufficiently anæsthetized to produce local insensibility which will permit the painless extraction of a tooth.

The next regular meeting of the Illinois State Board of Dental Examiners will be held at Springfield in the capitol building, on Monday, September 17, at 10 o'clock a. m. Candidates for examination are expected to present themselves at that time.

CHARLES R. E. KOCH, Sec. of the Board.

Gov. McGill, of Minnesota, has appointed Dr. L. C. Davenport, of Moorhead and Dr. H. A. Knight, of Minneapolis as members of the board of state dental examiners. They are to fill the vacancies made by the expired term of Dr. A. T. Smith, of Minneapolis and the removal from the state of Dr. F. H. Twitchell, of Albert Lea.

At the meeting of the Wisconsin State Dental Society it was exasperating to the executive committee to find that some, who had promised to read papers, came not, sent not their papers, and whose silence was only equaled by the grave and the oyster. The editorial on page 403 of the July number of the REVIEW is timely and may be perused, by those interested, with profit.

Any one having implanted teeth which have failed, in their possession will do well to offer up the specimens in the interest of science. Send them, with the history, to Dr. G. H. McCausey, of Janesville, Wis., who is making microscopic specimens of them, and who is studying the structure by means of which attachment takes place, and who is also endeavoring to learn the causes of failure.

We desire to draw the attention of our readers again to the value of an acidulated solution of bichloride of mercury: Distilled water, 1,000 parts; tartaric acid, 5 parts; bichloride of mercury, 1 part. Some experiments on microbes from saliva and the oral mucous membrane have shown that the addition of an acid renders the aqueous solution much more powerful and stable, as was first pointed out by La Place.

The Northwestern College of Dental Surgery of Chicago filed a bill in the Superior Court to restrain the Northwestern Dental College of Chicago from doing business. The former claims that the latter took its name in order to secure patrons who were attracted by the reputation of the complainant. The complainant is chartered, while the defendant is not, and it is alleged to be doing an illegal business.—*Chicago Herald*.

The Western States Passenger Association will carry dentists and their families to Louisville on the certificate plan. When a ticket is purchased take a receipt from the agent, who will specify the route, and at Louisville the secretary of the American Dental Association will fill up the blanks and a return ticket can be had for one-third fare returning. We presume that most dentists are familiar with the plan by this time, so that all will have little trouble going to or from the meeting.

List of dentists who have been licensed to practice in Illinois since the date of the last annual report, Dec. 15, 1887, up to July 16th, 1888:

NAMES.	No. of License	Location.	Diploma from College.	Class of.
Alexander Wm. A.	257	Litchfield.	Indiana Dent. College.	1888
Brunson G. M.	216	Joliet.	Phila. Dent. College.	1888
Brown Gilbert F.	217	Chicago.	Vanderbilt University.	1888
Brown John B.	226	Bloomington.	Phila. Dent. College.	1888
Becker Geo. H.	231	Chicago.	Chicago Col.Dent.Surg.	1888
Brigham Elden T.	238	Watseka.	N. W. Col. Dent. Surg.	1888
Barnes Jos. L.	251	Lockport.	Indiana Dent. College.	1888
Bentley Chas. E.	261	Chicago.	Chicago Col. Dent.Surg.	1887
Beeson W. H.	270	Martinsville.	Indiana Dent. College.	1888
Barclay C. J.	271	Chicago.	Chicago Col.Dent.Surg.	1888
Benham Emma L.	283	Chicago.	N. W. Col. Dent. Surg.	1888
Cigrand P. J.	236	Chicago.	N. W. Col. Dent. Surg.	1888
Cigrand B. J.	241	Chicago.	N. W. Col. Dent. Surg.	1888
*Cooper John M.	281	Chicago.	N. W. Col. Dent. Surg.	1886
Day Harry N.	274	Morris.	Boston Dent. College.	1882
Davis Frank H.	278	Chicago.	Chicago Col.Dent.Surg.	1888
Fonser J. R.	218	Joliet.	Phila. Dent. College.	1888
Ferguson Frank L.	220	Lena.	Penn. Col. Dent. Surg.	1883
Freeman Clarence B.	249	Evanston.	Chicago Col.Dent.Surg.	1888
Goodman Albert G.	230	Chicago.	American College.	1888
Gardner Thos. D.	263	Chicago.	Chicago Col.Dent.Surg.	1888
Goodrich C. A.	282	Elgin.	Chicago Col.Dent.Surg.	1888
Hart Orton P.	215	Freeport.	University of Tenn.	1888
Hale Leon T.	227	Chicago.	American College.	1888
Herrmann Richard	232	Chicago.	Chicago Col.Dent.Surg.	1888
Henry Thos. F.	234	Streator.	Chicago Col.Dent.Surg.	1888
Henkel Albert F.	243	Chicago.	Chicago Col.Dent.Surg.	1888
Hunter H. L.	280	Clinton.	Phila. Dent. College.	1888
Hug Albert F.	275	Quincy.	Penn. Col. Dent. Surg.	1887
Hebert Alfred W.	279	Chicago.	Chicago Col.Dent.Surg.	1888
Howard Chas. P.	285	Champaign.	University of Penn.	1888
Irons Letcher.	258	Salene.	Vanderbilt University.	1888
Ireland Lewis E.	266	Chicago.	State Board Examiners.	1888
Kargau Emanuel	237	Chicago.	N. W. Col. Dent. Surg.	1888
Kuester Wm.	273	Chicago.	Chicago Col.Dent.Surg.	1888
Lewis Wm. F.	228	Chicago.	American College.	1888
Long George E.	244	Chicago.	Chicago Col.Dent.Surg.	1888
Lerchner Lester T.	245	Chicago.	American College.	1888
Lattan Louis F.	265	Chicago.	Chicago Col.Dent.Surg.	1888
Lawrence E. E.	269	Chicago.	State Board Examiners.	1888
Marshall Clare W.	233	Chicago.	Chicago Col.Dent.Surg.	1888
Merriman Chas. J.	247	Chicago.	Chicago Col.Dent.Surg.	1888
Morris E. V. D.	248	Monmouth.	Chicago Col.Dent.Surg.	1888
Mills Otis S.	252	Chillicothe.	Ohio Col. Dent. Surg.	1888
Mann Anthony	260	Chicago.	Chicago Col.Dent.Surg.	1888
McIntosh Ed. Martin.	250	Ravenswood.	Chicago Col Dent.Surg.	1888
Merhoff Chas. E.	286	Chicago.	University of Mich.	1888
Norton M. E.	214	Chicago.	Chicago Col. Dent.Surg.	1887
Newman Jas. L.	223	Chicago.	American College.	1888
Pfennig Ernst	235	Chicago.	N. W. Col. Dent.Surg.	1888
Persons Eustace W.	240	Palatine.	N. W. Col. Dent.Surg.	1888
Peck Adelbert H.	259	Chicago.	Chicago Col.Dent.Surg.	1888
Rowley Clark R.	225	Chicago.	American College.	1888

*Writ of mandamus June 13, 1888.

NAMES.	No. of License	Location.	Diploma from College.	Class of.
Rosenthal Wm M.	254	Chicago.	Phila. Dental College.	1888
Romaine C.	267	Chicago.	State Board Examiners.	1888
Reedy Geo.	277	Chicago.	Chicago Col Dent Surg.	1888
Rice F. L.	287	Chicago.	Ohio Col. Dent. Surg.	1887
Steele Robert	232	Chicago.	American College.	1888
Starr Robert W.	229	Chicago.	Baltimore Col. Dent. S.	1886
Staley Harry R.	253	Lanark.	Chicago Col Dent.Surg.	1888
Solenberger Monroe J.	255	Petersburg.	Vanderbilt University.	1888
Sprinkle J. Monticello	256	Nokomis.	Indiana Dent. College.	1885
Stover Frank G.	264	Chicago.	Chicago Col.Dent.Surg.	1887
Stewart Henry	272	Chicago.	Chicago Col.Dent.Surg.	1888
Varney Luther H.	221	Maywood.	American College.	1888
Warner Eugene R.	219	Morrison.	Phila. Dent. College.	1888
Wangelin Hugo E.	224	Belleville.	Missouri Dent. College.	1888
Whitcomb Chas. R.	259	Prospect Park.	N. W. Col. Dent. Surg.	1888
Whitmore Chas. C.	242	Hainesville.	N. W. Col. Dent. Surg.	1888
Wadsworth Henry P.	262	Chicago.	Chicago Col.Dent.Surg.	1887
Wells R. S.	268	Chicago.	State Board Examiners.	1888
Way James P.	284	Chicago.	N. W. Col. Dent. Surg.	1888

Temporary licenses in force till September 17th, next :

W. W. Holmes.	Mt. Carmel.	Issued by Dr. Lawrence
Alex F. Moore.	Beardstown.	Issued by Dr. Lawrence
L. A. Lauer.	Chicago.	Issued by Dr. Koch
G. N. Gilbert.	Pana.	Issued by Dr. Koch
Louise Moeller.	Chicago.	Issued by Dr. Koch
David Kullmann.	Chicago.	Issued by Dr. Koch
H. H. Boulter.	Chicago.	Issued by Dr. Black
Julius A. Waschkuhn.	Chicago.	Issued by Dr. Black
A. Lamartine DeCamp.	Chicago.	Issued by Dr. Black
E. F. Fletcher.	Chicago.	Issued by Dr. Koch
F. T. Richards.	Albion.	Issued by Dr. Koch

The following are formulæ of Dr. Patrick's, used by him in his method of making crowns: Band gold—Pure gold, $\frac{1}{2}$; coin gold, $\frac{1}{2}$. Plate for cusps of crowns—Pure gold, 15 parts; platinum, $1\frac{1}{2}$ parts; to be kept at the fusing point one hour. Solder—Band gold, 89 parts; silver, 7 parts; copper, 4 parts. A lower grade of solder for filling the cusps of crowns is composed of solder, (the above) 89 parts; silver, 7 parts; copper, 4 parts.

Thomas Dinigan, of 188 East 64th street, died in the Presbyterian hospital, New York, of a hemorrhage from the socket of a tooth which he had had extracted. Blood began to flow very profusely as soon as the tooth was drawn, and efforts to arrest the hemorrhage were unsuccessful. After many vain attempts to stop the flow the man was taken in an ambulance to the hospital, where he died soon after admittance. The name of the dentist who operated on the man was not communicated to the coroner, but a searching investigation will be made.—*Exchange*.

The Missouri State Dental Society circulates the following petition :

To the Honorable, the Senate and House of Representatives in Congress Assembled:

GENTLEMEN: The undersigned citizens of the State of Missouri, engaged in the practice of dentistry, respectfully submit to you that we believe the duties on

dental instruments, teeth, gold foil, alloys, cements and other articles used in the practice of our profession, are so high as to practically prohibit their importation and use by dentists of the United States, therefore, we earnestly petition your Honorable body that the duties on the above mentioned articles be taken off or materially reduced, which your petitioners will ever pray, etc.

NATIONAL ASSOCIATION OF DENTAL FACULTIES.

The National Association of Dental Faculties will meet in a Fifth Annual Session at the Gault House, in the City of Louisville, Ky., at 9 a. m., on Monday, August 27, 1888.

In order that this meeting may be dispatched before the Southern and American Dental Associations get to work, it is hoped that the entire membership may be represented promptly at the hour indicated.

JUNIUS E. CRAVENS, Secretary,
Indianapolis, Ind.

A. O. HUNT, President,
Iowa City, Iowa.

PROGRAM OF ESSAYS TO BE READ BEFORE THE ODONTOGRAPHIC SOCIETY OF CHICAGO.

September—Sixth year Molar, Dr. F. H. Zinn; Salivary and Serumal Calculus, Dr. A. Nelson. October—Irregularities, Dr. C. P. Pruyn; Root Filling, Dr. Jas. Stewart. November—Gold and its Combinations, Dr. E. Noyes; Ethics, Dr. H. H. Wilson. Annual Meeting: December—Amalgams, Dr. J. A. Dunn. 1889: January—Electro Therapeutics, Dr. G. W. Whitefield; Treatment of Pulp, Dr. E. Lambert. February—Fees, Dr. H. L. Barnum; Micro organisms, Dr. L. D. Henderson. March—Hæmorrhage, Dr. C. W. Lewis; Cements, Dr. Wm. Witt. April—Diseases of Fauces, Dr. C. D. Calkins; Tumors of Oral Cavity, Dr. A. J. Nichols. May—Shock, Dr. C. J. Underwood; Caries and Necrosis of the Maxillary Bones, Dr. C. J. Merriman. June—Phagadenic Pericementitis, Dr. T. D. Gardner, Diseases of the Gums, Dr. C. H. Wachter. September—Cocaine, Dr. C. P. Pruyn; Dentrifices, Dr. L. F. Lattan. October—Metallic and Mineral Plates, Dr. J. A. Dunn; Bridge Work, Dr. A. H. Peck. November—Saliva, Dr. T. A. Broadbent; Matrices and Separators—Dr. H. N. Pitt. Annual Meeting: December—Dental Profession, Dr. E. Noyes.

It is reported that at the Essen Krupp Gun Works, near Cologne, Germany, the metal aluminum is being rapidly turned out in 100-pound ingots at a cost of 25 cents per pound. If this is true its full significance is not realized by the public, for this silvery metal is the most abundant in nature. Common clay everywhere contains from two to ten pounds of it in every 100 pounds. It is therefore, more common than iron or all the metals taken together. The cost of extracting it has been the great and only hindrance to its general use. In 1853 its value was \$240 per pound, and the following year a chemical discovery dropped its price to \$44. A steady decrease since then has taken place to about \$5 per pound, at which price its uses are enormous, but nothing to compare with the alleged Krupp 25 cent value. The former cost of this metal has been somewhat detrimental to its earlier and more general introduction in dental practice. Some further improvements in its method of manipulation will lead to the supplanting of rubber as a base for artificial teeth. For removable bridges it will perhaps be the best and most serviceable base that can be resorted to. Its lightness and the unchangeableness of its color are very desirable attributes.

CHRISTIAN SCIENCE AIDING DENTISTRY.

A rather unusual method of treatment in connection with a surgical operation was successfully carried out at the recent meeting of the New Jersey State Dental Society at Asbury Park. Dr. G. L. Curtis, of Syracuse, implanted a tooth for Dr. Seymour. Cocaine was used, but the patient felt the toxic effects of the drug.

The other patient was Dr. D. C. Cornwall, and Dr. E. C. Kirk implanted a bicuspid for him. No anæsthetic was used, there were no evidences whatever of discomfort from the operation. Only a few, however, understood that a new departure was being made. The facts are these: Mrs. L. B. Holbrook, the mental physician, at present living at 915 Grand avenue, Asbury Park, was visiting some friends at the hotel, and the subject of Christian Science naturally engaging herself and friends in conversation, she was asked to exhibit the efficacy of the method. She was introduced to Dr. Cornwall (whom she had never met) by Dr. S. C. G. Watkins, of Montclair, chairman of the clinic committee, and treated him for some minutes prior to his undergoing the operation. The result as has been said, was a perfect success. The doctor gained the reputation of being a Stoic, whereas he had been saved this pain by Christian Science. This is perhaps the first time this method has ever been used in dental surgery.

THE SYMPATHETIC DENTISTS.

The dentists who have been holding their annual meeting in this city (Milwaukee) have received much useful advice from the officers of the association and from those appointed to prepare papers on special subjects. They have been told to get out of the ruts and bogs and shadows that their sympathies may be enlarged and their appreciation of humanity deepened. But nobody seems to have touched the matter about which the dentists most need instruction. Nobody has urged them to rise to an appreciation of the value of their own work and to charge sufficiently for jamming fillings into teeth. The dentists have too wide and deep a sympathy for humanity, as it is; they need rather to consider their own interests. They don't seem to care a rubber dam for money. We have known dentists to charge only as much as a man could pay without putting a mortgage on his house. They don't do justice to themselves.

We know that dentists make more money than doctors, lawyers or preachers, but that is no standard. The profession of dentistry requires a larger intellect, in the hands; it is one of the learned professions, like watch-tinkering and umbrella mending. Your watch-tinker will charge \$3 for blowing an imaginary bit of dust out of your watch, when the only trouble is that you have forgotten to wind it. He is worthy of his hire. So is the dentist. Even more, for he has to bear the spectacle of your suffering, which touches his sympathetic nature and is worth \$2 a suffer. Then he has to run the risk of the filling coming out and should charge for the hurt this is to his feelings. The dentist, in the simplicity of his heart, appears to think that when he has fixed up a man's teeth, he should leave him enough money to get on occasional meal and not take all he has. It is a mistake, although an amiable one. The man who has been through the dentist's hands never cares much about eating again. The dentist should have a military training in, which he will learn to charge.—*Milwaukee Paper.*

BUCCAL ULCERS.

In the May number of the REVIEW on page 233 Dr. Ottofy describes and gives treatment for what I have been accustomed to call and treat as buccal ulcers.

He describes their origin and course very well, except he says they begin *on* the mucous membrane. They begin *in* or *beneath* the mucous membrane of mouth, tongue or gums as a small papule which opens through the epithelium and discharges a fluid, probably a lymph, as the result of the attending congestion. They then spread beneath the membrane and destroy the tissue around and over them for a space varying from one twelfth to one-sixth of an inch in diameter, when they appear as an ulcer with sharply defined everted edges. They run this course in from 12 to 48 hours and are then ready for treatment. Mild applications are useless, and mouth-washes, that sting and smart, such as chlorate potassa, phenolsodeque, bichloride of mercury, etc., only to serve to aggravate them and perpetuate their existence. Whittle a pine stick till the end is no larger than the ulcer, and dip it into chemically pure nitric acid; dry the ulcer with spunk or cotton, and as the acid on the stick ceases to appear wet, gently and firmly press it on the surface of the ulcer till it appears white; it will sting and smart for a moment, during which time no fluids should come in contact with it to wash the acid off. They will heal in from 12 to 24 hours, and one thorough application is all that is needed; but if it should not cure, it can be repeated next day. Having been a frequent sufferer from these annoying sores I have found the above plan all that one could ask for a sure cure.

NOTICE.

In choosing a route to Louisville the "Monon Route" offers a direct line to the joint meeting from Chicago. The tickets will be good going from August 25 to 28 inclusive, and returning up to September 12. The "Pan Handle" tickets are good August 27 and 28 going, and returning up to September 10.

SUBSCRIBE for the DENTAL REVIEW.

OBITUARY.

J. F. AUSTIN, D. D. S.

Resolutions adopted by the Faculty of the Northwestern College of Dental Surgery, Chicago:

WHEREAS, Since our last meeting it has pleased an all-wise Providence to remove from our midst our friend and former associate, Professor John F. Austin, D. D. S., one of the original members and the first Dean of this Faculty,

Resolved, That we learn of his decease with unfeigned sorrow, realizing that in his death this college has sustained the loss of a warm friend and the profession an esteemed member and zealous advocate of advanced education. By the Faculty and Alumni of the Northwestern College of Dental Surgery he will be remembered as an earnest teacher and an able adviser with feelings of affection, gratitude and honor.

Resolved, That these resolutions be entered upon the records of the Faculty, and a copy forwarded to the family of our departed friend.

THE
DENTAL REVIEW.

VOL. II.

CHICAGO, SEPTEMBER 15, 1888.

No. 9.

ORIGINAL COMMUNICATIONS.

AN UNBORN IDEA, HENCE UNNAMED.*

BY ARTHUR HOLBROOK, D.D.S., MILWAUKEE, WIS.

"An Unborn Idea" may help out the programme and possibly furnish material for a paper or for society work. Voltaire said: "Ideas are like beards; men do not have them until they grow up." Dr. Johnson said: "Words are daughters of the earth, but ideas are sons of heaven." Beaconsfield said: "One should conquer the world not to enthrone a man, but an idea, for ideas exist forever." Bulwer Lytton wrote: "Our ideas, like orange plants, spread out in proportion to the size of the box which imprisons its roots," and Shakspeare called them "the very coinage of the brain."

The writer asks your indulgence if he is too vigorous or earnest, or if he makes sweeping assertions in his attempt to call attention to matters he may consider vital to society, and in things vital to Dentistry, and in this he will ask the kind forbearance of any who may be disposed to charge him with wantonness. Members of this Society are pledged "to promote the honor, usefulness and interests of the profession and to maintain mutual fellowship and recognition."

Personal prejudices, individual opinions and positive convictions are to be kept under control, for the general good, to be used only when they can *do* good. Yet, with these cardinal principles continually in sight, there is frequently an element of personality and positiveness prevailing in the discussions follow-

* Read before the Wisconsin State Dental Society, July, 1888.

ing the reading of a paper, and it is sometimes difficult to fill the programme or to find subjects for essays.

Opinions are as many and as varied as there are minds to form them, and this society, like similar societies, has learned from experience that its success depends upon its ability to respect honest, intelligent opinion. The very life and interest of these meetings come from matured opinions, individual experiences and positive convictions. "Diversity of opinion proves that things are only what we think them." Lowell once wrote: "The foolish and the dead alone never change their opinions." Egotism or individual positiveness, however, in an assembly like this, is capable of doing great harm. There are but few persons, in any community, who may be entrusted to manage the concerns of others or to dictate to others the course they must pursue or the way they must do things. Ostentatious dictation is always boorish and out of place. In a society composed of students and workers there should be no advantage accorded one over another, and no person should lift himself or be lifted into an atmosphere of superiority or consider himself supernaturally endowed. We were all born alike with equal privileges and aspirations, and members of this society may well remember the principles they have pledged themselves to follow, and to meet together in harmony and to be loyal and charitable to one another, working for a common cause open and free for one as for another. At the present time any practitioner of dentistry, who does not keep pace with the world, or who does not fully investigate and apply the truths of revelations that are being continually made, is unworthy of his calling and the title of dentist. With the aid of innumerable societies scattered over the land, the score of dental journals at prices within reach of all, and easy access to busy, earnest brother workers, there is no excuse or palliation for any dentist who will not keep himself posted in all that is being done in his special calling. Yet with all these facilities at equal command there is always a class who are forever trumpeting their unequal facilities for obtaining information, and their especial fitness, or superiority or adaptability for understanding and applying dental facts. To be sure, there are and have been and there will continue to be *leaders*; but it is not of them we write. They can, and have, and will continue, to take care of themselves. The careful stu-

dent and conscientious operator, who quietly absorbs and applies the truths of his science and who makes his life work an earnest of his convictions, must often submit to many discouraging surroundings. The emblazoned announcements that greet the public are calculated to capture the eye and pocket. There should be no corner on ways and means, or method in dentistry. One of the great purposes of a dental society should be to encourage honesty and expose trickery. The public should understand dental societies are for their good, their protection and their use. If they desire truth, let them learn it through the action of societies, not from boastful pretenders. Societies, like individuals, ought to be taken and used intelligently for what they are worth and for what they were intended. The larger societies have a larger scope and are doing a larger work, but societies of a more local character, of a lesser scope, are more contracted and consequently are expected to do a more local or a more directly personal work.

Delegated and representative societies, made up of selected members, can formulate a rigid code of ethics and maintain a high standard of membership qualifications, which local and contributing societies must respect and in the main accept. Local societies, in a large measure, should be more or less missionary in their character and not be overcrowded with great luminaries who preponderate and overshadow everybody and everything. Any person giving his time and money to attend Society meetings is entitled to a compensation. He ought to return to his work renewed in strength, enlightened in methods, and so well satisfied with his outlay that he will come again. His presence here ought to indicate him a man of intelligence, good taste, and interested in his work. Disappointments can easily be remedied, if personal matters and overzealous interests can be made to give way to devotion to truth, to imparting practical methods and to fostering brotherly equality and kindness.

Members of the dental profession are more isolated and altogether differently situated than are the members of any other profession, and, in a very large degree, it is this isolation and individual reliance that begets much of the positiveness that is so common among dentists and which so greatly retards the growth of professional confidences and sympathies. In any other pro-

fession or any other calling, how quickly the interested parties would unite to crush a monopoly or fraud. The actual work of the dentist is also unusually hard and nerve-wearing upon the worker. There is no other work to compare with it. It is a scene of suffering and fortitude, of waste and repair, continually, day after day, year after year, the same. All sooner or later recognize this wear and tear upon the operator, but generally not until it is too late to be of service. The preservation of health and strength is a very important subject to the dentist and ought to be well understood by him.

The dentist is not only a worker, but he is called upon to use his skill and labor with careful judgment. He cannot work for all alike. What may be altogether right and proper for one may be altogether wrong and improper for another, and what may be good for an individual at one age or time may be very bad for the same individual at another age or time. In a word, the methods and materials used to save the teeth of one person may be of no service to another, and what may be good for the child may be unfit for the adult. It is not always a question of what is the best thing to do to save teeth, for oftentimes that is entirely out of the question, but it is frequently a question of what is the *next* best thing to do. The physician or surgeon generally has no such continually harassing perplexities for the various complaints and accidents he is called upon to treat; for they have the drug store or the medicine case or the surgeon's chest at hand, and the remedy which will do for one will generally do for another and for all, and also do as well for all ages and conditions. The physician and surgeon have usually certain inflexible, specific duties to perform, but a dentist with a broken broach in the apical foramen or extremity of the nerve canal of a bicuspid, of a nervously organized patient, when the mercury registers 110 in the shade, an hour past luncheon time, and the next appointment anxiously waiting, has reached the climax of dental perplexities, has gone beyond the question of remedies and specifics, and the next best and *only* thing for him to do is to calmly lie down and die. Yet with all the cares and perplexities of dental work, there are many things in which the dentist may take pride and pleasure, and if the finances do not always show up commensurate with the service rendered, he may rejoice in the good he has ac-

complished; for he has enabled the deformed to smile, the dyspeptic to live more comfortably, and all who seek him to rejoice in retaining the fullness, beauty and expression of the face itself. It is a lamentable fact that teeth just now are in a deplorable condition and that with the popular conception and present prevailing methods of treatment they are liable to indefinitely remain so. Dentistry as an art has done all it can to remedy the ravages of destroying agencies and to discover causes, but as yet it has been unable to stop the trouble, change the character, or correct the tendency.

Teeth are decaying just as fast and in just the same way they did years ago, and dentists and dentistry are unable to change or stop it. The people are largely responsible for the present condition of the teeth, traceable, perhaps, through many generations; but dentistry must take considerable share of the responsibility. Is dentistry doing all it can to change the present deteriorating tendencies? This is an era of change and advance in the arts and sciences. People are expecting and are not in the least surprised at new discoveries, new inventions and new methods. In a generation more it may not be wonderful or surprising, if the present popular inclinations are fostered, if the first duty of the nurse will be to trundle the baby to the surgeon to have the germs of the coming teeth destroyed, and then to the dentist to be fitted with the latest patent porcelain substitutes.

According to modern ideas there must have been a radical change in tooth structure quite recently, for dentists are frequently informed by their patients of how their patients' ancestors were endowed with double teeth, "all the way round," and never had toothache or decay or one extracted, and in fact never paid a cent for dentistry. The popular ideas concerning tooth degeneration and the growing indifference of people to the preservation of their natural teeth ought to be corrected. The return to healthy tooth-structure will depend entirely upon a right understanding of the matter by the people themselves.

Previous to the late war dentistry was not thriving as it is now. What has so suddenly developed it into the huge dentistry it now is? The introduction of rubber as a base for artificial teeth was the beginning of a new era in dentistry, and although rubber has done untold good and has been a blessing to thou-

sands who otherwise would be unable to procure substitutes for their natural teeth, yet it has brought so many popular fancies and fallacies, has destroyed or displaced so many natural teeth, and has opened the way to so much charlatanism and so many unprincipled methods, that its real usefulness and lasting benefits to mankind may be questioned.

Previous to the introduction of rubber, mechanical dentistry was differently conducted, and dentists, to a great extent, were their own manufacturers of artificial teeth; but the demand for porcelain teeth became so general after a cheap, easily made base was found, that the work of modeling artificial teeth was turned over to ordinary day laborers in factories. The range of shades, styles, forms and patterns are now innumerable, and the number of factory teeth annually produced reaches into the millions. Dentists, who were advertising the millennium at five dollars a head, suddenly realized a commercial value even in rubber. During the war gold was gold, and it sometimes took two or three dollars in greenbacks to buy a dollar in gold, and the price of one set of teeth on a gold plate would often buy enough for the whole family on rubber. The result was, store teeth for everybody; the cry was imperative. The factories were happy. This craze for "rubber" teeth was overwhelming; the laboratory was the principal part of the office. The preservation of natural teeth was of minor importance. The price of an ordinary gold filling would buy a whole set. Rubber came and conquered and to-day probably a million people have the whole or a part of their mouths encumbered with a mixture of rubber, sulphur and vermillion, to which are attached a combination of feldspar, quartz and kaolin, all as a substitute for the beautiful and useful organs nature gave them. Would such sacrilege be tolerated with any other organs or with any other part of the body? Would such innovation and meddlesomeness be encouraged? Would it be right, or did the Creator make a mistake and was every other part of the human body made perfect and the teeth alone left for manufacturers and corporations to improve on?

As the writer is not under the restraint of the International Tooth Crown Company, he may be, perhaps, permitted to offer a few "unborn ideas" concerning bridge-work and crowns in general. It is a well known fact that gold can not be used exclu-

sively as a filling material for the arrest of decay in natural teeth. There are various reasons why it can not be done. Leaving out of the question its ability to save teeth, it may be safely asserted that the plain question of time and expense will not permit the exclusive use of gold for more than one person out of a hundred. This is a plain fact. The dentist must look outside his own immediate practice to learn this; he must remember the thousands who never visit a dentist and the thousands who visit the dentist simply through necessity for the relief from pain and the thousands who seek the frauds in dentistry. What shall then be done with the ninety-nine who can not afford gold or the time necessary to use it? Must they depend upon crowns and bridges? If the gold worker is able to save only thirty-two teeth out of every three thousand two hundred, who shall care for the three thousand one hundred and sixty-eight that are left? Shall only one person be served while ninety-nine are left uncared for? Hardly. Who is doing the greater good to the world, the man who helps one person or the one that helps a hundred? Is there not here a field for missionary work? Is there not sometimes a disposition to forget the true mission of dentistry and sacrifice teeth for shekels and factory-made substitutes? It is here the so-called "new departure" steps in and says this sacrifice must stop. Dear old Dr. Flagg, God bless him, comes in here and says, "I will prove to you, my fellow-workers, this *can* stop," and he keeps his word. It is here also that the International Tooth Company steps in and says, "The highest art has been reached, the poor man can have teeth rivaling nature's best examples, teeth unfit for gold fillings ought to be taken out or cut off and ours inserted." If nature has made such a great mistake in our teeth, then what a pity the International Tooth Crown Company was not incorporated and in existence before Adam, that the Creator might have had the benefit of their experience and advice. Seriously, the dilemma of a layman or of a struggling dentist is not to be wondered at. "Rubber" teeth for five dollars, gold crowns for a dollar, and teeth without plates, with a chromo, for a nickel. Must hard-working, conscientious dentists become parties to this fraud? Must the code or a society membership close his mouth and tie him hand and foot? It is high time one should be fearless, that some one should talk and act. I am not here to

speaking for my old instructor, Prof. Flagg. He can, and has, and will, speak for himself. Nor do I propose to defend or espouse the "new departure"; that will care for itself. But as a dentist I desire to give my individual thanks to any one or to any creed or to any methods that will come up to us and say: Teeth which the Creator has given must be saved while they are required. A poor man has a value upon his natural teeth as well as the rich, and while crowns and bridges may sometimes be a necessity and are often useful, it is clearly the duty of the dentist to prevent that necessity as long as possible. This is especially true during youth and early maturity. The stability of this improvement upon nature is yet to be tested, and from specimens seen daily, it may be concluded, it requires unusual ability and skill to make it satisfactory or successful. The bridge and crown specialists ought to recognize their own ability to improve upon nature and to let alone every case they know ought not to be treated by their methods. It may be excusable to thrust this work upon matured people, but to inform a young man or woman whose natural teeth *can be saved* that their style of work is a necessity is deceptive and inexcusable. If they are unable to save natural teeth they ought not to cover up their weakness by such methods. If a dentist in any form of service is unable to do what he knows to be right he would serve himself and the public by sending his patients to some one who does, and if he *does* know how to do what is right and does something else because it is easier or for the money in it, then he is unworthy the title of dentist, and is simply a mechanic and money-getter. There is another aspect to this wholesale manner of treating teeth that has not, so far as I am informed, received the consideration due it. Is it necessary for human happiness and the maintenance of the body and its faculties that the full complement of teeth be kept through life, and if not, how many can be spared and at what age? If the normal condition of the body can be maintained with a few teeth or with no teeth, what then is the necessity, outside of the æsthetical and ornamental elements, for keeping them after their usefulness is past? Nature generally knows what she is about. It is lamentable we have not the dental history of our deceased ancestor Methuselah, for without doubt that case alone would prove to us what nature could do without

teeth. Who knows but it was the loss of his teeth that enabled that venerable octocentenarian to renew himself from century to century. It is not altogether the number of teeth one can save, but rather how useful can he make those he does save. This patent right business has done more to demoralize the art of dentistry and salvation of tooth-structure than all the quacks. One of the greatest, if not *the* greatest, benefits the profession has ever received has never been patented and was never controlled by a corporation, and dentists, as a class, have never properly attested their gratitude for the liberality and genius of the giver. Who will ever forget Barnum or his gift of the rubber dam? It is grand that such a boon is not to be mixed with vulcanizers and bridges and made odious by lawsuits. The purchaser of a patent enables himself to unblushingly advertise his merchandise. It falls alike into the hands of the unscrupulous and the conscientious, and, while one may use it as an accessory, the other may use it for rivalry and gain. The "unborn idea" increases as we undertake to encompass the problems of our calling. The channels contributing to our science are too numerous and too deep for us to explore them in a day or in a lifetime, and how vain is it for any man to declare himself master of any one of them. Yet it is the bounden duty of every member of this and every other profession to search the avenues of art and learning for light and help. The eminent English surgeon, Sir Henry Thompson, has recently added to his works a little monograph entitled, "Diet in Relation to Age and Activity," and in the opening pages of the American edition he states he has come to the conclusion that "more mischief in the form of actual disease of impaired vigor and of shortened life accrues to civilized man from erroneous habits in eating than from the habitual use of alcoholic drink," and later on in the work, in giving his reasons for this sad condition, he says: "Another agent in the combination, to maintain for the man of advancing ages his career of flesh-eater, is the dentist."

"Nothing is more common, at this period of life, than to hear complaints of indigestion experienced, so it is affirmed, because mastication is imperfectly performed for want of teeth. The dentist deftly repairs the defective implements, and the important function of chewing food can henceforth be performed with com-

fort. But without any intention to justify a doctrine of final causes, I would point out the significant fact that the disappearance of the masticating powers is mostly coincident with the period of life, when that species of food which most requires their action, viz., solid animal fibre, is little, if at all, required by the individual. It is during the latter third of his career that the softer and lighter foods, such as well-cooked cereals, some light mixed animal and vegetable soups, and also fish, for which teeth are barely necessary, are particularly valuable and appropriate. And the man with imperfect teeth, who, thanks to his artificial machinery, can eat and does conform to nature's demand for a mild, non-stimulating dietary in advanced years, will surely be blessed with better digestion and sounder health than the man who eats as much flesh in quantity and variety as he did in the days of his youth. Far be it for me to undervalue the truly artistic achievements of a clever and experienced dental surgeon, or the comfort which he affords. By all means let us have recourse to his aid, when our natural teeth fail, for the purpose of vocal articulation, to say nothing of their relation to personal appearance. On such grounds, the artificial substitutes rank among the necessities of life in a civilized community. Only let it be understood that the chief end of teeth, so far as mastication is concerned, has in advancing age been to a great extent accomplished, and that they are now mainly useful for the purposes just named. But I cannot help adding that there are some grounds for the belief that those who have throughout life, from their earliest years, consumed little or no flesh, but have lived on a diet chiefly or wholly vegetarian, will be found to have preserved their teeth longer than those, who have always made flesh a prominent part of their daily food."

These ideas coming from a great student, a careful observer, and from unquestioned authority, deserve the serious consideration of every dentist. In undertaking to care for the welfare of another, it is well usually to put one's self into the other's place, and to ask, what would he do for himself. Each individual practitioner is best qualified to judge of his own individual strength and skill, and also the needs of his patrons, and he in no manner ought to sacrifice his strength or skill in vain attempt to do something he is not so well qualified to do, simply because some one

else will do it if he does not. At the present time the country is filled with specialists, and if their word is to be relied upon, there is nothing for humanity to do but to find the right person, and life, strength and happiness are secured beyond adventure. It is well, however, to take these claims of pre-eminence and perfection with a few grains of doubt. "The proof of the pudding is in the eating of it." At the best it is very little any one person can know, and no one has the moral right to say he knows it all, and to the exclusion of others knowing the same. If one person is superior to another, it will be readily recognized without glaring announcements. Parchments and degrees from colleges, or good standing memberships in societies, or even a certificate from a State Board of Examiners, do not confer manhood, experience, or physical, or mental adaptability, and these must not be relied upon or accepted as a license for exclusive claims. Some of the best and most conscientious dentists this State ever produced, never took a course at college, and it is with great difficulty they could be made to take any part in society work. In dentistry, there ought to be no new school and no old school, for it is yet in such infancy that it can not proclaim any school; but if one person by skill, labor, and time, has brought one truth to surface, let all accept it. The man, who is successful in saving natural teeth, has earned the title of dentist, and he should be respected whatever may be his school or methods. A little while, and possibly the present new school may be old and obsolete. Give the credit to whom it belongs, but if one person can not accept the theories or practices of another as consistent with his own beliefs, then he should not be denounced as of a different school and undeserving his respect. All members of a society, at least, should not be distrustful or envious of one another, and if any one is especially endowed or qualified, in any direction, the remaining ones ought to have the benefits of it. Let no one be discouraged or dissatisfied with the work he has undertaken, only be true to principles, and do his duty by the light and strength given him. In the July *Cosmos*, Dr. Bogue is reported as saying, "The choice of materials should depend upon the character and condition of the teeth, the character of the person and the conditions of the pocket." But in addition to this might be added the choice of materials, and of methods employed, should also in a very large

degree depend upon the ability, character, and condition of the person who is to do the work. The mood of the operator, as well as the mood of the patient, oftentimes will decide the best course to pursue, for what might be done well at one time, under favorable conditions, might be very poorly done under other or unfavorable conditions. Therefore, every dentist is not only the best judge of himself, but he ought also to recognize his weaknesses, and undertake only those things he can do understandingly, thoroughly, honestly and well.

Finally, this paper which may be as uncertain and misleading as its title, nevertheless has a purpose. Consideration and discussion are respectfully invited.

HYGIENIC AND SANITARY DENTISTRY.*

BY E. C. FRENCH, EAU CLAIRE, WISCONSIN.

For the last quarter of a century the dental profession has almost entirely spent its time, thought and experiment in the line of mechanical and restorative measures, whereby they might build up and supply the waste places made vacant by disease. And so great has been the activity of mind and mechanical skill in this direction that there has been no case, however bad, requiring mechanical or operative treatment that has not been fully met and successfully conquered. Because of these wonderful achievements in this direction, we fear that the profession at large has lost sight of the more important province of dentistry, those measures which shall tend to lessen the necessity of contour fillings, bridge work and artificial dentures.

We boast as a profession that of all the learned professions none has made such rapid strides towards perfection during the last half of a century as that of dentistry, but in all our pride and boasting may we not safely call a halt, and ask, have the causes for which we have been called into existence, requiring these wonderful demonstrations of skill, been lessened to any certain degree? We have no hesitancy in saying the weight of evidence is on the negative side of the question. We have quadrupled in numbers, such as we are, during the last quarter of a century, and those who have attained a reasonable amount of skill have ever

*Read before the Minnesota and Wisconsin State Dental Societies, July, 1888.

found an increasing demand upon their time by those in need of their professional services. We are well aware that some will say that this is wholly due to the fact that people are becoming more enlightened on the subject of caring for their teeth, and not that there is a general degeneration in the healthy production of tooth substance. We will admit, yea affirm, that the longevity of teeth that have been properly filled has been largely increased, but we will not admit that the causes producing this devastation of dental organisms have been successfully met, or to any great degree mitigated.

Now the above affirmation brings us face to face with the following proposition; shall the future province of dentistry be, as the past has been, a mere restitution of lost parts, and a means of gaining a livelihood; or shall it be a philanthropic one, in which we shall seek to know the causes producing this devastation of dental tissue, and the remedies, hygienic or otherwise, which shall in the generation to come produce a nation with good teeth, instead of a comparatively toothless one such as we have now? I shall assume, for the sake of the thought I wish to convey, that it must be philanthropic to a large degree. Thanks to a few eminent biologists in our profession, we are now beholding the dawn of a new era, and we trust that the bright rays of the noon-day sun of modern discovery will shine upon us, and that we shall be able to see face to face what we now behold in a glass darkly. Miss Marryatt, an English novelist, who had made a tour of this country, being asked to give some of the national characteristics of American women, replied, "Diamonds and false teeth, I should say; every American woman has a rage for the former, and the latter, owing greatly to the system of living practiced in the United States, is unavoidable." The former assertion we may deny, but the latter contains what we all know to be too true. The primary cause which is conducive most to the trouble we have as a nation with our teeth, is directly attributable to our methods of living, and a want of proper knowledge and observance of hygienic and sanitary laws. Therefore, the future aim of dentistry should be humanitarian; in that we shall seek to use preventive, instead of resorting almost wholly to restorative measures, as we do now.

During the reign of Queen Victoria, the average length of life in England has been lengthened from twenty-eight to thirty-

eight years—ten years added to the life of her English subjects. And how? By a strict enforcement of preventive measures and observance of hygienic and sanitary laws. And now, may not we, in time, look for the same results regarding the general improvement and durability of the teeth, if we, as a profession, seek to educate the rising generation in the use of those kinds of foods and drinks, that shall tend to build up strong and vigorous constitutions?

Right here we meet with a great obstacle in the way of accomplishing this desired end, in that our country is flooded with adulterated foods, and it is almost impossible for us to obtain pure articles of diet, and as a means toward the desired end we must seek redress in the halls of legislation, asking for such fines and imprisonments that no manufacturer shall dare to place upon the market any article of food that is not strictly pure. The different theories advanced as to the cause of caries of the teeth from time to time, are almost as numerous as the scientists who have essayed to enlighten us on this important subject. To each, is due much credit, in bringing us to our present knowledge and understanding of the real causes with which we are to battle and seek to overcome.

That hereditary taint is a prime factor, we all admit—lactic acid and micro-organism, a fact which no one can successfully deny. Dr. Miller found lactic acid an agent invariably producing decay similar to caries. The micro-organism theory at first was that the microbes burrowing into the dense structure of the tooth, they literally ate the tooth up, and used its substance for their own food, but more recent discovery has shown us that a certain micro-organism is found in caries of the teeth, the waste product of which produces lactic acid. That certain acids, destructive to tooth tissue, void of micro-organisms, may exist, or vice versa, I do not know, or feel myself competent to discuss, but I shall presume in what more I have to say, that the micro-organism is the "little devil" with which we have to deal, where he came from no scientist has told us, but that he is here, and, seemingly to stay, is the fact with which we have to deal. Good live, healthy micro-organisms, such as we find in caries of the teeth can only exist and multiply under conditions favorable to themselves,

and that these favorable conditions are largely due to our methods of living is not a mere hypothesis, but a real live fact.

Let us now deal with some of the preventives, simple as they may seem, yet effectual if vigorously and persistently adhered to. First, contagion should be avoided as far as possible. The mother, with a mouth alive with micro-organisms, may, and no doubt often does, convey through the loving kiss to the lips of her innocent child, the germs of disease, which we find so vividly marked in very many of our little patients, children from squalid districts, where filth is indulged in as a luxury, fed upon decaying vegetables, stale meats and generally unwholesome diet, into whose mouths tooth-picks, brush, antiseptics or disinfectants are never permitted to enter; such are permitted to drink from the same cup, exhale their foul breath, mingle with and among children from homes of refinement, in over-crowded and poorly ventilated school-rooms, and thus the seeds of disease are sown broadcast from one to another. There should be introduced into our public school curriculum text books, relating to the hygienic and sanitary care of the teeth. Children should be taught in the home and at school that the first important thing to learn is to keep the mouth clean. Parents must be taught that foods requiring the vigorous use of the teeth in preparing it for the subsequent processes of digestion, are far better than those requiring little or no mastication. Children should never be hurried while partaking of their meals, or allowed to engage in their work or sports after eating until they have properly cleansed their teeth. During the period of life in which the teeth are being developed, children are undergoing a process of mental cramming in ill-ventilated school rooms, compelled to swallow their noon-day meal without proper mastications, in order to reach the school room on prescribed time.

Everything known to the inventive genius of modern school teaching is used to hurry up the development of mind, regardless of that equally important development of body. The law of demand is made greater than that of supply, and consequently we find this low development of tooth structure. The intense strain upon the nerve centers caused by overwork prevents normal digestion, and the tale is too plainly told in our every-day observation. Briefly, we must have better sanitary surroundings in our

homes and schools. Fathers and mothers must be made to understand that if they would see their children possessed of good teeth and strong, vigorous constitutions, they themselves must not indulge in those habits of life, the evils of which, the scriptures say, "shall be visited upon the children to the third and fourth generation."

All cereal foods should contain as much of their outside coating as may be, vegetables should be sound, meats of all kinds should be from the young, vigorous and healthy animal, instead of the broken down and worn out ox, or cow that has become useless for dairy or breeding purposes. All animals intended for food should be fattened upon the best of grains, with perfect sanitary surroundings. We should observe the lesson so plainly taught, that nature in providing food for the lower orders of animal creation has not compounded a conglomeration of highly spiced pastry or flavored ices.

Having pointed out some of the causes which we think are conducive to very much of the present condition of our teeth as a nation, let us turn our thought to some of the preventive measures we may make use of. First, teach; second, instruct; third, educate the people to keep their teeth clean. Parents must be made to understand that it is of more importance to keep their children's teeth cleansed than their hands or faces; that regular visits should be made to their dentists so that in case superficial decay or irregularities of the teeth exist, affording a receptacle for decomposing food which cannot be removed by the patient, they may be corrected. Our duty is to furnish and instruct the people, as far as may be, with and in the use of antiseptics and disinfectants which tend to destroy micro-organisms, and their baneful effects upon tooth substance.

Lastly, and not least, if the germ theory is anything more than a theory, the dentist should never introduce instruments from one patient's mouth to another's without first thoroughly disinfecting in a solution of carbolic acid, or other known germicide. In fact, everything about the dental office, which in any way might convey germs from one patient's mouth to another's should be thoroughly antisepticated before using.

PRESIDENT'S ADDRESS.*

By W. S. SMITH, D. D. S., NEWCASTLE, KENTUCKY.

Gentlemen:—As the edict has gone forth and the law is inexorable that your presiding officer shall address you, I will try to do so in the shortest possible manner. I shall not consume your time in trying to demonstrate that the practice of dentistry is an honorable calling. Whether doctors of dental surgery are to remain such, or are to become doctors of medicine as well, seems to agitate the minds of many in our profession. Those who are clamoring for recognition by the medical profession, have cause to congratulate themselves in the action of the International Medical Congress. Therefore, whether dentistry be considered as an independent profession, or as a branch of medical practice, the recognition is alike complimentary.

The editor of the *Cosmos* has well said, "whatever may be the relation of dentists to doctors; the practice of dentistry, is based on broad, ascertained facts of physiology, pathology, chemistry and materia medica, and success in practice depends upon the intelligent recognition, and application of fundamental facts and principles, which are applicable alike to medicine and dentistry." That dentistry is allied to science admits of no question; as it embraces nearly all the sciences, information must be gathered from all sources.

The advancement of dentistry in this country has been exceptionally rapid even for this age of progress.

That the associative influence has been the direct cause of this rapid advance, can not be doubted.

As societies have taken higher grounds and advanced positions, the colleges and profession at large has advanced accordingly.

In no country has our profession developed such an amount of inventive genius, scholarly attainment, and operative success as in the United States.

That the progressive members of our fraternity, fully recognize the need of the highest order of dental service to the public, is demonstrated by the efforts constantly being made for the improvement in all departments, of dental practice.

*Read before the Kentucky State Dental Association, 1888.

That the best men in our profession are to be found in our associations, is a well established fact.

He who refuses to ally himself with those of his profession, or stops to count the cost, necessarily places himself beyond the reach of progress, can certainly take no interest outside his own office, becomes disgusted with himself, encourages selfishness, suspicion, distrust and envy.

The dental society should be redolent of truth, facts, principles and methods. It should promote fraternal feeling among its members, and aid in diffusion of knowledge by essays, discussions and clinics. Papers on various subjects are desirable, but the best of all is to show each other better ways of doing practical things. The code of ethics should be rigidly enforced, and waste of time avoided, by closely following the programme. If men have anything to demonstrate they should be given the opportunity of proving its worth.

The life of a society is like the life of the body, it is essential that it should be active. As activity promotes good health, so an active membership makes a live society.

Men of ability, and strong in their solicitude for the future of our profession, looking with abhorrence at the chaotic state of the dental profession as it existed in Kentucky, and in order to elevate it to the desired standard, in 1870 formed themselves into what is now known as the Kentucky State Dental Association. These men, were men of sound judgment. The dentists were isolated from each other, little social or professional intercourse existed between them, there was no law regulating the practice, but envy and suspicion abounded on all sides.

While we must admit, this association has not done, and is not yet doing all that it should, the outcome to some extent is flattering. As soon as the standard was raised the best men in the profession flocked to its support. A law was passed regulating the practice, which was amended from time to time, until now we have a law second to none. A dental college has been established with a corps of professors, clinical instructors, and demonstrators who are men of acknowledged ability. The standard of qualification is high, and the student has the opportunity of acquiring as thorough a dental education as at any school in this country.

Withal, gentlemen, there is something yet to be done; this association should take a step onward, and upward, and exert every effort to make these annual meetings more interesting, hold out every inducement to the dentists throughout the state to come and take part.

Do all in your power to bring about a kindly feeling, yet see that the code of ethics is rigidly enforced, and forever put a stop to derogatory remarks about our honest competitors. No man can expect to succeed in life by tearing down his neighbor, and no man with honest purpose will attempt it. Let this association see that our profession is honored, each member thereby becoming his brother's keeper, being ever ready to advise or encourage; in so doing then this association can, and will, be one among the many attractive associations of this country.

It is very evident there is something lacking here. These meetings do not attract the attention they should. This association does not stand in the scale of progressive associations as it has the power of doing if we would but be up and doing; some one must be sacrificed, by having it said of him "he wants to lead." Who will dare take the step?

I have heard it said more than once, "I would do this, or that, but they would say I wanted to lead." Some one must lead, or we die, for the cry has already come up, "deliver me from the body of this death."

Now let us see if we can remedy this matter. Let every member do all he can. We will then stand alongside with others who stand high.

A paper touching upon practical points pertaining to dentistry, could be drawn out to almost endless length, but I shall not further occupy your time.

My incumbency of the office to which you elected me one year ago, has been very pleasant to me indeed, but in approaching this more trying hour of having to preside over your deliberations, I come with misgivings born of comparative unfamiliarity with the duties of the chair, still I hope you will exercise your forbearance and that I shall have your hearty co-operation in conducting the business with decorum, dispatch, and impartiality.

PROCEEDINGS OF SOCIETIES.

NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

GALT HOUSE, LOUISVILLE, KENTUCKY, August 27, 1888.

The association met in the parlors of the Galt House at 8 P. M. The president, Dr. Geo. H. Cushing of Chicago, called the meeting to order and stated that as he had ceased to be a member of the Illinois State Board of Dental Examiners he was no longer a member of the association. On his retiring from the chair Dr. T. S. Waters, the vice president, presided. The roll was called and the following states were found represented:

(A complete list of the states having representatives present is here presented as several gentlemen arrived next day.)

Indiana, P. G. C. Hunt and S. T. Kirk; Ohio, J. Taft, H. A. Smith and C. R. Butler; New Jersey, F. A. Levy; South Carolina, G. F. S. Wright; Illinois, C. R. E. Koch and R. N. Lawrence; Maryland, T. S. Waters; Georgia, S. B. Barfield; Mississippi, W. W. Westmoreland; Kentucky, A. O. Rawls, C. E. Dunn and C. V. Rosser; Wisconsin, B. G. Maercklein.

Arkansas was admitted to membership, Dr. M. C. Marshall and L. G. Roberts being present as representatives.

A communication was read from Dr. E. Palmer of the Wisconsin State Board relative to the licensing of first course students from dental colleges, the letter was placed on file.

Dr. J. Taft said it was undesirable to issue temporary licenses to undergraduates, as it was not beneficial to the people and it also reflected on the colleges. He felt that no college would undertake to certify to the fitness of an undergraduate as qualified to practice after attendance on one course of lectures. Dr. Koch said that he was not in favor of issuing licenses, in many cases, to college graduates, as he believed there would be a better protection to the people, from incompetents, in examining all applicants for license, regardless of the possession of a diploma. He was emphatic in declaring that temporary licenses were issued only on the most rigid examinations in the State of Illinois. Dr. Barfield then read extracts from the Georgia law.

A business committee was appointed consisting of three

members: J. Taft, C. R. E. Koch and S. B. Barfield. A resolution was adopted requesting the various state boards to transmit copies of laws and amendments thereto to the secretary of the association.

The secretary was instructed to have 500 copies of the constitution and by-laws and standing resolutions printed. Dr. Koch moved that a committee of three be appointed to present a list of colleges whose diplomas may be recommended as worthy of recognition by State boards of examiners, adopted. F. A. Levy, A. O. Rawls and G. F. S. Wright were appointed on this committee. Adjourned to meet Tuesday afternoon at 4:30 P. M.

AFTERNOON SESSION.

Tuesday, August 28.—Minutes read and approved. The committee appointed to take up questions propounded by Dr. E. Palmer of the Wisconsin State Board reported as follows:

“Your committee to whom was referred the letter of Dr. Edgar Palmer, Secretary of the Wisconsin Board of Examiners, respectfully recommend the discontinuance of the practice of giving permits to practice dentistry to students during the time of their college work or before their graduation.

We also recommend that any applicant for examination and license to practice dentistry between the regular sessions of the respective state boards may be examined during such interim, by one or more members of a state board as may be designated by said board, and upon such examination being satisfactory a permit may be issued to the applicant to practice dentistry till the next meeting of the board and no longer. This examination and permit shall in no case exempt the candidate from an examination by the full board at the next regular meeting.

Your committee do not believe it advisable to have a uniform list of questions for examination throughout the country. We would recommend however that state boards embrace in their examinations the following branches, and that there be not less than ten questions on each of these branches, viz:

Anatomy, Physiology, Pathology, Histology, Hygiene, Materia Medica and Therapeutics, Chemistry, Metallurgy, Operative Dentistry and Prosthetic Dentistry, and Dental Jurisprudence. We suggest that each state board formulate its own list of ques-

tions and that this list be changed at least once each year and that a standard of at least seventy-five per cent. of correct answers be required.

J. TAFT, C. R. E. KOCH, S. B. BARFIELD.	}	Committee.
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The committee on colleges reported a list which does not include all colleges now in existence, whose diplomas the association recommends to the various state boards as worthy of recognition by them. This report was finally adopted at a subsequent session. The list may be had on application to the secretary. Dr. Lawrence was appointed on the business committee in place of Dr. Koch. Adjourned to Wednesday evening 10 P. M.

WEDNESDAY EVENING, 10 P. M.

After reading the minutes and approving them, a committee was appointed to assist in securing uniformity of the laws of the different states and territories. At this meeting some routine business was done, but the principal work consisted in the election of officers for the ensuing year, which resulted as follows: President, T. S. Waters, Baltimore; Vice President, S. T. Kirk, Kokomo; Secretary and Treasurer, F. A. Levy, Orange, New Jersey. The association adjourned to meet at 9:30 A. M. the first Tuesday in August, 1889, at Saratoga, New York.

CHICAGO DENTAL SOCIETY.

MAY 1, 1888.

Discussion upon papers read by Drs. P. J. Kester and J. E. Hinkins, on "Antiseptics and Germicides," and "Disinfectants and Deodorants."

Dr. Ottofy in opening, said, the subjects were of considerable importance to the dental profession, and ought not to be lightly treated. The "Germ theory" is becoming universally accepted by all men of intense thought and study, and its practical bearing upon the results of operations performed in the oral cavity, make it doubly interesting to the dentist, therefore "antiseptics" and "disinfectants" open a field of research in which there is much practical benefit likely to accrue. He advocated the use of the bichloride of mercury solutions in nearly all conditions and

cases, in varying potency; as strong as 1-200, or as low as 1-2000, and predicted good results in its application.

Iodoform is also a favorite remedy with him, and productive of a favorable issue in most of his cases; its liability to be carried away, the only drawback in its use. Using eucalyptol he had met with many successes and few failures. The introduction of Listerism has proved the need of antiseptic measures.

Dr. Black said, our knowledge of antiseptics has progressed slowly. While we have obtained much skill in their use, our knowledge of them is still very inaccurate, when we come to speak of the amount of this or that antiseptic drug required in a given condition.

All antiseptics are poisons, and they act by poisoning, thus destroying or preventing the development of micro-organisms. They also act in a similar way upon the animal cells, though not always in the same degree. Some substances act more energetically on the vegetable cells, or upon low forms of microscopic fungi than upon the animal, and it is upon this their value as medicinal antiseptics are based. For instance, mercuric bichloride is a poison to both animal and vegetable cells, but it will destroy the vegetable cells when in solution, so dilute, as not to materially injure the animal cells, hence we may use it in certain solutions to destroy microbes that are mingled in the tissues, or in wounds, without destroying the animal cells. Yet if too much is applied both animal and vegetable cells are also destroyed. This difference in the action of mercuric bichloride upon the animal and vegetable cells is probably more marked than in any other antiseptic that we possess.

Many of the experiments made for the purpose of finding just what concentration or dilution of any, or all, the antiseptics may be required to destroy microbes are misleading. In our test tubes we use a certain solution and the strength of that solution is maintained during the experiment. In practice it is different. We employ a certain solution upon a wound and it is immediately diluted by the secretions from the wound. Furthermore it is removed by these secretions so quickly, that it fails in its action, and this may often occur in aqueous solutions or those freely soluble. Those very slowly soluble, as iodoform, may be retained longer and with a more continued application; oils may

be used for the same reasons. Dentists may use antiseptics with much more precision than the surgeon, because the application and retention of the medicament free from admixture with foreign matter is so easy. An antiseptic sealed in the root canal of a tooth can be retained for many days, but if placed upon a suppurating surface quickly disappears.

Again, different microbes are affected differently, some are more tenacious of life than others. Heat has been spoken of as an antiseptic, and when it can be applied in sufficient intensity it is a good one, but unfortunately it will destroy the animal cells more readily than the vegetable, or more readily than the microbes; being in this respect the opposite of mercuric bichloride. Especially is this marked of the spores of fungi; 212° Fahr. will destroy the ordinary microbes of the mouth in a few moments, but it requires a much higher temperature and a longer period of time to destroy the spores of some of the moulds. It is probable that this difference as to the tenacity of life, will be found to exist among the different pathogenic fungi, and that each species may be affected by the various antiseptics in dissimilar manner.

Our use of antiseptics is therefore largely empirical as yet. We are still using them in the manner and quantity suggested by clinical experience, rather than following scientific expositions of their powers, and from the nature of their employment must, for the present at least, continue to do so.

Dr. Harlan spoke at some length on the subject of disinfection, saying that in some cases a disinfectant, that was very sparingly soluble in water, was most needed where a dressing must be left for a long period in a pulpless tooth, but giving the preference in all other cases to one which was freely soluble in water for its instantaneous effects. He complimented the society on the character of the work now being done as compared with its history of a few years ago.

Dr. Baldwin said, he believed spores, microbes, etc., to be the product of putrefaction and not the producers of decomposition. He did not believe that Lister had proved the necessity for antiseptic surgery. The use of drugs is not essential, and he laid more value upon cleanliness than the use of medicaments, but when he does use any drug he makes sure that it is potent.

He does not believe pus formation to be the result of microbes and cited cases under his own observation to sustain his views.

Dr. Noyes said, it would be a useful service if some one who disbelieves the germ theory of pus formation, would take the trouble to go over the accounts of experimentation, and point out wherein the supposed proofs are fallacious. A general denial, and an assertion of disbelief, is not a sufficient answer to a series of carefully conducted experiments.

Dr. Baldwin asked how to account for suppuration in a deep abscess, or in a case of broken bones with the skin intact, there is no possibility of infection from the surface of the body.

Dr. Noyes replied, that if the germ theory be true, the case cited by Dr. Baldwin must be attributed to indirect infection, that is, the pus germs are conveyed by the blood from some other suppuration elsewhere in the body. Experiments upon rabbits appear to be conclusive as to this mode of infection. The difference in solubility of different drugs, teaches us what to use in a given case. When we wish to shut up a pulp chamber with medicines in it for a time, use a disinfectant very slightly soluble. When the pulp is exposed, or covered with a mass of softened dentine we want a rapidly diffusible and soluble drug. He thinks that many pulps are infected, so that they are poisoned and die, in the process of capping, etc.

Dr. Newkirk said, there is both a scientific and practical side to this question. Mechanics play an important part, cleanliness is good and water is good, but with water covering three-fourths of the earth's surface and distributed everywhere, the human race was a very dirty race till the advent of soap. We often wish to leave a mass of softened dentine over a pulp, but it needs disinfection, and if the moisture present be not removed it will prevent the passage of the fluid drug into the mass, or will so dilute it, as to render it ineffective, hence the necessity of removing moisture before applying the disinfectant. Some one stated that all disinfectants are poisons—more or less. We want to apply them to destroy certain things not belonging to the tissues, and they should not penetrate beyond a certain distance, or they may touch the healthy tissue and cause harm. Here lies the fault of many practitioners. In their anxiety to be thorough they go too far, forcing medicaments beyond the apex of a root

when it is not required, using too coarse a broach to permit a return current, or the fluid may be forced too rapidly. In this practical side of disinfection the utmost care is necessary.

Dr. Reid said, he once thought as Dr. Baldwin does, but his later experience has caused him to change his views.

Dr. Baldwin said there was too much theory about this subject for him to believe in it. Medical books are full of such theories. It is not necessary to use antiseptics at all times.

Dr. Allport said, that not having heard the papers read, he could only speak in regard to what had been mentioned in the discussion he had listened to. He wished that he with others had more positive information as to the work or office of the microbes in the process of health and disease, for much that is claimed for them is but conjecture, theory without proof. It is claimed that microbes are always present in, as well as, the cause of pus formation, and therefore necessarily harmful. That they are always present where pus is found he believes to be true, and can readily account for their presence in exposed sores, or in the alimentary tract or air passages, but it is not so easy to account for their presence in the tissues of the body, yet that they are found there does not admit of a doubt, and as we are all similarly constructed it is but reasonable to suppose they may be found in all our bodies, varying in quantity and types, according to the conditions of health and circumstance, being present in less numbers in healthy than in bodies generally diseased, or in local lesions.

Their presence, however, is not evidence that their mission is always that of mischief. They may be "messengers of mercy." It is easier for those of us who believe in a God and in His wisdom, to believe that he has placed them within the tissues of our bodies, that they may sometimes act as friends and conservators of health, rather than that they should be considered and treated as enemies, for are they not often nature's agents in removing diseased tissue, to conserve health?

Dr. Noyes thought he had been misunderstood in regard to what he had said about pus infection. He did not think any one would suppose that pus germs are likely to be taken into the circulation through the unbroken skin, but that they may be transferred from one suppurating place in the body, to some other inflamed territory where they may find a proper opportunity for

development, seems to be shown by the line of experiments upon rabbits previously referred to.

Dr. Black said the precise action of microbes in the production of pus need not be entered into now, further than to say that as yet we have not been able, by experiment, to produce pus without them. The question now seems to be over the difficulty of accounting for their presence in positions not exposed to direct infection from the air. In bringing up cases illustrative of this point, we should always remember that it is exceedingly difficult to trace every infection; indeed, that is impossible.

A case in mind, where small pox seemed to have arisen *de novo*, shows the difficulty of tracing infection. A girl who had lived at a farm house for a year and had not once been away, and there had been no case of the disease within fifty miles, came down with small-pox. It was afterwards discovered that in the bottom of her trunk she had some clothing that had been infected with small-pox, and that she had opened cut some of the garments and put them on a week before she was taken sick. If this fact had not been discovered the origin of the disease would have remained a mystery, and so must remain many cases of infection. Not long after Lister had shown so conclusively that microbes had to do with the evils and difficulties of wound treatment, it was suggested by Billroth and others that microbes in the blood and tissues of the patient might infect a wound notwithstanding the Lister dressings—"they might come from behind;" but after the development of Koch's plans of staining, it made investigations more thorough, it was determined by the best investigators that the healthy man or animal had no microbes in his blood or tissues, and therefore this kind of infection did not occur. At the same time it was found that under certain circumstances microbes did appear in the blood and tissues, and that they might remain some time, especially in septicæmia and some other conditions, but that these were finally eliminated by way of the kidneys.

It had long been observed that broken bones healed very generally without suppuration, provided the skin was not broken, while compound fractures with skin broken very generally suppurated, yet occasionally a simple fracture would suppurate. Becker and Krause determined to investigate this, to see if infec-

tion played a part in these suppurations. For this purpose they selected healthy rabbits, and carefully broke their legs without injuring the skin, and found that these fractures healed regularly without suppuration. Then they varied the experiment by injecting certain pus-producing microbes into the blood, selecting a vein in the ear for the purpose, and found in these cases suppuration occurred at the point of fracture. They were thus able to produce artificially the conditions under which such wounds would suppurate, and they uniformly found the same variety of microbes in the pus that they had injected.

In the case of the occurrence of deep-seated abscess or whitlow, the person has undoubtedly become infected with pus-producing microbes coincidently with some slight injury that has caused a deposit of inflammatory exudate, thus giving the opportunity for suppuration.

In the case of boils and carbuncles, he had satisfied himself, by the examination of many cases, that the first infection is generally direct—that it comes from without, but it is quite common for these to come successively, one following another for some time. In these cases the secondary abscesses are probably the result of infection of the tissues from the first suppuration. These indirect infections are very important to us as dentists. The pulp of a tooth may die, and the case may go on for a long time without abscess; but finally a time comes when the person becomes infected with pus-forming microbes, through some slight injury, perhaps with very little suppuration, and then alveolar abscess occurs from indirect infection.

“It has been said this evening that while microbes are found accompanying decomposition, they are not the cause but the result of the process.” This statement leads back to the old debates between Bastian and Pasteur, in which this was the exact point of controversy. Bastian claimed that through the molecular changes set in motion by decomposition, life was originated *de novo*, and Pasteur claimed that there was no *de novo* origin of life, but that microbes or their spores must be first in the material, and that the decomposition was always coincident with the second development, and caused by these life processes. This question is so conclusively settled that the scientific world seems to have accepted the conclusion as final. It should be

remembered that to say that microbes are caused by the decompositions, is equivalent to saying that life originated from the molecular motions of matter.

Dr. Allport said, by way of illustration as to the usefulness of microbes: "Suppose a case presents with a deep-seated lesion that has gone through the several stages of inflammation, and nature can no longer be trusted to carry off as excrement the abnormal accumulations in the tissues. We apply a poultice. What for? To form pus. Is it not so?"

Dr. Newkirk said this was the first time he ever heard the idea advanced that a poultice is applied to make an abscess or produce suppuration. We apply poultices where an abscess already exists, to promote change in the superficial tissues and hasten the evacuation of pus; or we apply a stimulating poultice where we are in doubt of the existence of pus, hoping to promote resolution and abort pus formation.

Regarding the question of whitlow and pus formation, the remarks of Dr. Black should be thoroughly borne in mind. The micro-organism of pus cannot work on living tissue. In the felon, so called, there has been death of tissue by mechanical force, and this may be the only point favorable to the action of the microbe, hence abscess here and not elsewhere. The experiments upon rabbits would seem to prove conclusively as to the source of pus in simple fractures.

Dr. Allport said that the poultice was useful in circumscribing the inflammation, and forming or rather facilitating and hastening pus formation. If microbes are the absolute cause of pus formation, and the breaking down and liquefying of the tissue between the concealed pus and surface, so that it may be evacuated, then these pus-producing agents are of value as conservators, essential as remedial agents, and under certain circumstances should be classed as nature's agents, and should deserve a place among our best therapeutical remedies. The poultice, by softening the tissues and promoting the more rapid propagation of these agents, renders their work more easy, and the greater the number of pus-producing bacteria the quicker the relief.

Dr. Costner called attention to the change between the subject announced and that debated, and desired more of the practical and less of the theoretical side of the question. The best method

of filling and treating teeth, the value of certain remedies as therapeutic agents, and such matters, were more needed by the average dentist than the theory of pus formation.

Dr. Kester closed the discussion.

NEBRASKA STATE DENTAL SOCIETY.

(Continued from page 403.)

At the evening session Dr. L. C. Ingersoll lectured on "THE NATURE OF THE SO-CALLED DENTAL PULP." By drawings on the blackboard the attention of the Society was called to the extensive ramification of the nervous tissue of a tooth. A pulp is virtually exposed as soon as we are below the dentine or cementum; it is true that the most dense and rich plexus of nerves, arteries and veins is not yet exposed, but some filaments of nerves are certainly cut and injured by our instrument. Hence it is more important to fully understand the nature of the tissue of which a tooth is composed than many believe. This nervous tissue is extremely sensitive, and while under ordinary and natural conditions it retains its vitality, it is peculiarly sensitive to foreign interference, and its feeble life will bear but little abuse before it succumbs, less irritation will cause its death than would lead to death in any other part of the body.

It is the speaker's opinion that the dentinal tubuli are filled with nervous tissue, filaments of the pulp extending into all of the dentinal tubes, and it is but natural that the rupture of any of these nervous filaments should be communicated to the pulp and from there to the brain center. In removing the pulp its entire tissue can not possibly be removed; portions of it in the dentine remain, and those parts nearest the pulp chamber die, while the portion nearer the cementum receives nourishment—some at least—through the lacunæ and canaliculi of the dentine with which dentinal fibers anastomose.

The cause of the increased sensitiveness of the dentine at its periphery (contact with the enamel and cementum) was explained by the speaker by claiming that the layer of odontoblasts, which are multipolar cells and which are abundant on the external surface of the pulp being nerve centres, the same

as the pulp itself is a congregation of nerve centers, impressions made on the periphery of the dentinal fibrils (which are branches of the odontoblasts) are rapidly communicated to these cells, and when they are cut the recession of the remaining portions causing pressure upon the cell results in pain. Any injury to the fibrils is communicated to the pulp, and in a more or less degree impairs its vitality. This in some measure is also the effect of local anæsthetics; they destroy the vitality of a part of the pulp, and thus enable the operator to proceed a short distance under a diminution of sensibility.

The use and importance of the introduction of non-conductors between metallic fillings and the bulbous portions of the pulp were here dwelt upon at length, and the guarding against allowing the pulp to be affected by changes of temperature recommended.

THURSDAY MORNING—CLINICS.

At this session Dr. H. T. King attached a Low crown to one of the upper central incisors of a boy.

Dr. G. E. Douglas filled a large cavity with Williams' pellets.

Dr. W. H. Stryker filled a cavity with Watts' crystal gold and 1000 fine gold foil.

Dr. H. J. Cole also filled a 'cavity with Watts' crystal gold.

Dr. Louis Ottofy implanted an upper right lateral incisor for Dr. A. Gaiser.

Dr. Keyes extracted some roots, using ether as an anæsthetic.

Dr. I. P. Wilson treated an abscess and filled the roots with gutta percha and orange wood.

Dr. Varce performed an elegant operation with the electric mallet, using White's No. 4 gold foil, introducing a large contour filling.

AFTERNOON SESSION.

DR. W. F. ROSEMAN, of Fremont, read the report of the Committee on Dental Literature, of which the following is an abstract:

"The early history of dental science and the establishment of the early dental colleges was recited at length, and the beneficial influence of the meagre literature of the days of

Bond, Harris, the Flaggs and others was then commented on. In speaking of the first dental journal it is said that the establishment of this journal was a nucleus around which the best thoughts of the profession centered, and it was hailed with delight by the better class of dentists throughout the land. Of course there were dentists who rejected the innovation, just as there are now dentists in Nebraska who have no need for, and who do not wish to derive any benefits from such gatherings as are afforded by dental societies. Since the establishment of the pioneer journal for dentists a score of more or less merit have been established." * * *

DR. J. J. WILLEY, of Wahoo, read a paper on the "Dentist and the Practice of his Profession," of which the following is an abstract:

* * * "The ideal dentist should be one of God's noblemen. He should not stoop to, or be guilty of, any of the vices to which the common run of mankind are given. He should in the strictest sense of the word be a gentleman. His surroundings, his associations and his personal appearance and actions, should be such as to inspire in his patients and those with whom he comes in contact confidence in him. I have a very exalted opinion of our profession and its members, and I think it is the duty of every practicing dentist to do what he can to build up and elevate the profession in which we are engaged, instead of making a mere money-getting affair of it, and only being interested in professional matters when there is a fee in sight. There are men in our ranks whose only idea is to get what money can be made, regardless of the good done in return. Their chief aim is to be considered a good fellow and make their good fellowship answer for true merit. Our dealings are in the main with the weak and suffering; for this reason we should cultivate a gentle bearing toward those with whom we come in contact, who by the misfortunes and errors of this life are made our patients, always endeavoring to minister to them in such a manner that they will have no reason to think us anything but true gentlemen and competent, honest dentists. We are often referred to as hard hearted, rough and unfeeling; this I believe to be our own fault, for I do not think we as a general thing make as much of an effort as might

be made to spare our patients pain; yet I do not believe this to be true of the majority of the profession, but, on the other hand, I presume there is as much feeling in the breast of the dentist as can be found in any human being whose office it is to inflict pain that disease may succumb, and while our duty demands that we cause a certain amount of suffering, yet that amount should be made as light as the nature of the case and skillful handling of instruments will admit. I do not believe in the rough and unfeeling manners which some practitioners assume, and yet I know that to do our work well we must be thorough. When commencing the practice of dentistry one is complimented for his gentle and painless manner of operating, but he will find after awhile that he was not doing his work right. Any man can be a "painless" dentist and not fill a tooth properly. Yet, while the proper preparation of a cavity and insertion of a filling must cause some pain, I believe a dentist can be humane and make his operation as painless and comfortable to his patients as the circumstances will permit. Pain causes people to dread the dental office, and consequently will result in the loss of their teeth. The more skillful and thorough one becomes the less pain they are likely to inflict. * * *

"In every case presented to the dentist he should do the best within his power to give to his patients that which is to them the most beneficial. Endeavor to so educate your patients up to the importance of caring for their teeth after the dentist has done what he can do to preserve the same. Not all operations are perfect; on the contrary, there are but few perfect ones, yet it is the duty of every one engaged in the practice of dentistry to make himself as thoroughly familiar with what is necessary to perform perfect operations as is possible." * *

At the evening session the president, Dr. H. T. King, of Fremont, Neb., read the annual address, which was published in the July number of the *REVIEW*. Dr. Louis Ottofy read a paper on Operative Dentistry. The report of the Committee on Clinics was read and discussed, and the society adjourned to meet at Wahoo, Neb., on the third Tuesday in May, 1889.

NATIONAL ASSOCIATION OF DENTAL FACULTIES.

LOUISVILLE AUGUST 27, 1888—FIFTH ANNUAL MEETING.

The meeting was called to order by President A. O. Hunt at 9:30 A. M., at the Galt House. On motion a committee of three was appointed to present an order of business. This committee consisted of F. H. B. McDowell, T. W. Brophy and J. Truman. The Secretary was empowered to employ such assistance as was deemed necessary to make reports of the proceedings.

Roll being called, the following-named responded :

Baltimore College of Dental Surgery, M. W. Foster, B. Holly Smith.

Philadelphia Dental College, S. H. Guilford.

Chicago College of Dental Surgery, T. W. Brophy, A. W. Harlan, Geo. H. Cushing, J. N. Crouse.

University of Iowa, Dental Department, A. O. Hunt, L. C. Ingersoll, I. P. Wilson.

Kansas City Dental College, J. D. Patterson.

Missouri Dental College, W. H. Eames.

Indiana Dental College, J. E. Cravens.

Northwestern College of Dental Surgery, F. H. B. McDowell, E. J. Perry, N. J. Roberts.

Ohio College Dental Surgery, Grant Mollyneaux, H. A. Smith.

University of Pennsylvania, Jas. Truman, E. T. Darby.

Pennsylvania College of Dental Surgery, C. N. Pierce.

Vanderbilt University, W. H. Morgan, H. W. Morgan, D. R. Stubblefield.

Dental Department Southern Medical College, L. D. Carpenter.

University Dental College (Dental Department Northwestern University), J. S. Marshall.

Dental Department Harvard University, Thos. Fillebrown.

New York College of Dentistry, Frank Abbott.

Louisville College of Dentistry, J. L. Howe, A. W. Smith.

Boston Dental College, J. A. Follett.

University of Tennessee, J. Y. Crawford.

University of Michigan, J. Taft, N. S. Hoff.

Meharry Dental College, G. W. Hubbard.

The treasurer presented his annual report which was referred to an auditing committee.

The annual dues were fixed at \$3.00.

A long debate of the following resolution ensued:

Resolved, That colleges connected with this Association shall accept the certificates of associated institutions, subject to the rules governing each school.

Which was indefinitely postponed.

A resolution was adopted limiting speeches of representatives of colleges to two on any one question.

Adjourned to 3 P. M.

AFTERNOON SESSION.

Roll call showed twenty colleges represented at the afternoon session.

A resolution was offered by Baltimore College of Dental Surgery:

Resolved, That as a matter of courtesy, when a student leaves one college to go to another, the dean of the second college be hereby requested to write to the dean of the first, inquiring whether there may be any objections to the transfer, this to be done whether the student holds a certificate of examination or not. Carried.

Prof. Abbott, chairman of the executive committee, reported that only two colleges had furnished the schedules of the time spent in attending lectures and clinics.

Dr. Howe asked for an interpretation of the standing rules of the association: "attendance during two full courses in separate years required before examination for graduation. *New York, 1884.*"

Dr. Guilford said it meant that the student could not attend a summer course in one school and immediately enter upon a winter term and graduate the following spring.

Dr. Harlan was asked to explain the rule as he had offered it in New York. He said the object in offering the rule was twofold, first to prevent a first course student from a college having a winter term of five months going immediately after the close of the term to a school having a regular lecture session, beginning in February or March and coming up for graduation at the en

of the term. Second, to prevent a student going from a school having a summer term of lectures and entering the senior class and graduating the following spring. If a student were permitted to do this he could graduate in about 13 months from the time he first entered college.

DR. HOWE did not seem to think that the explanations were satisfactory, so the subject was discussed for some time without any result, save that a number of resolutions were offered on the subject, all of which were lost.

AFTERNOON SESSION.

Tuesday, 28, 3 P. M.—National University Dental Department was admitted to membership, Dr. S. J. Cockerille being present.

The Northwestern College of Dental Surgery offered the following:

Resolved, That after the close of the scholastic year of 1889-90 attendance upon three regular winter courses of instruction of not less than six months each, held in separate years, be required of students by colleges in this association before examination can be had for graduation.

The Dental Department of the University of Minnesota made application to succeed the dental department of the Minnesota Hospital Medical College, which institution was merged into the latter at the close of the session 1887-8; this was not acceded to.

Several resolutions were offered, but under the rules they were laid over for one year.

Dental Department of Howard University made application for membership which was laid over for one year.

DR. EAMES offered the following:

Resolved, That it is the sense of this meeting that the course of instruction in all colleges belonging to this association be increased to three years of not less than five months each, and that the delegates shall submit the question to their respective faculties and report their action to this association at its next regular meeting that definite action on this question may be had. Adopted.

WEDNESDAY AFTERNOON, 3 P. M.

DR. FOSTER propounded a number of questions which were submitted to a committee. Dr. R. B. Winder sent in a letter, the substance of which was, how to deal with worthy men who

had been in reputable practice for many years, who might desire to obtain a diploma; nothing was done in regard to the matter. The time for the meeting of the American and Southern Dental Associations having arrived, the meeting adjourned until 8 A. M. Thursday.

THURSDAY, 8 A. M.

The committee having in charge the questions of Dr. Foster reported that most of them were already covered by the standing rules. The one with reference to junior students, they answered by saying that the faculties might examine them as often as they pleased. They answered that they did not know how often they were examined at the present time.

The second question: Colleges of the Association will receive into their senior classes only such juniors as present certificates of having passed a satisfactory examination on the studies of the first year. *(Chicago, 1885.)*

Was answered by reading the above. The third question asked was about the entrance of students who had attended a course of lectures prior to 1885, must they be examined? The committee answers, yes.

DR. T. W. BROPHY offered the following:

That hereafter a delegate representing a college in this convention shall be a member of its teaching faculty, and shall present credentials from the college to which he belongs, legally authorizing him to represent his college before he shall be entitled to vote.

Committee on text-books reported progress. Two works will shortly be issued, one on operative dentistry and one on orthodontia. Dr. Sudduth was invited to recast the chapters in the American System of Dentistry, and add what might be deemed necessary, and publish a work on Histology.

A resolution was adopted to the effect that a junior student on account of sickness or other inability might be examined by the faculty of another college after obtaining the consent of the dean of the college where the first term was spent in attending lectures, etc.

The Association then proceeded to the election of officers.

President, A. O. Hunt; vice-president, L. D. Carpenter; secretary, J. E. Cravens; treasurer, A. W. Harlan; committee ad

interim, T. Fillebrown, T. W. Brophy, J. Y. Crawford ; executive committee, Frank Abbott, J. Taft, S. H. Guilford.

Committee on schools, Frank Abbott, S. H. Guilford, L. C. Ingersoll, R. B. Winder, Thomas Fillebrown.

Adjourned to meet at Saratoga the Monday preceding the first Tuesday in August, 1889.

AMERICAN AND SOUTHERN DENTAL ASSOCIATIONS.

JOINT MEETING HELD AT LOUISVILLE, KY., AUGUST 28, 29, 30 AND 31.

TUESDAY, AUGUST 28 — MORNING SESSION.

The joint meeting of the American and Southern Dental Associations was called to order by Dr. C. G. Edwards, chairman of the local committee of arrangements, on Tuesday morning, August 28, 1888, in the chapel of the Female High School at Louisville, Ky. Nearly three hundred dentists were present. The opening prayer was delivered by the Rev. Mr. Moore. The Hon. Chas. D. Jacob, mayor of Louisville, extended the welcome of the city in a few well-chosen words. On behalf of the dental profession of Kentucky, Dr. A. O. Rawls, of Lexington, Ky., extended a hearty welcome to the members of both associations. Dr. E. T. Darby, of Philadelphia, responded on behalf of the American Dental Association to these speeches of welcome. He recounted the various advantages of Kentucky, her beautiful women, fast horses and good whisky. He spoke in high terms of the proverbial hospitality of the Southern people. Dr. J. Y. Crawford, of Nashville, Tenn., responded on behalf the Southern Dental Association. He recounted the names of famous men who had their birthplace in Kentucky. In this connection he mentioned the fact that Dr. W. H. Morgan, of Nashville, was born in Logan county, in 1818. He also referred to Henry Clay in very graceful terms, and was heartily applauded.

TUESDAY, AUGUST 28—EVENING SESSION.

The meeting was called to order by Dr. B. H. Catching, president of the Southern Dental Association, who introduced Dr. Frank Abbott, president of the American Dental Association, who then delivered the annual address, of which the following is an abstract :

After a short reference to the objects of the joint convention, he mentioned feelingly the deaths of four members of the American Dental Association, and then read a paper on Dental Education. He spoke of the advances made in dental surgery in the past few years, and of the increased facilities for the thorough education of dentists, stating that in no other country had the science attained a similar position.

In the United States the number of colleges of dentistry is twenty-nine, and these give students every advantage. To make a good dentist, however, it was necessary for a man to have a good education, a fair proportion of brains, considerable mechanical genius and great dexterity. It is more difficult to obtain a dental education in Europe than in the United States. There is more liberality toward the student in this country, while at the same time the interests of the people are not lost from view, for most of the States require either the possession of a diploma or the passing of an examination. Attention was called to the overdoing of work for children, and the caution and judgment which should be exercised in extracting the deciduous teeth.

Dentists were admonished to be strictly upright and honest in their dealings with patients. The operation of implantation, introduced by Dr. Younger, is one of the most wonderful advances. While it is true that microscopists have found absorption of the roots to have taken place in those cases which have failed, hope was expressed that the difficulties now besetting the entire success of these operations may be overcome. He further stated that Americans were an inventive people, and this was acknowledged the world over. To Americans belonged the credit for much of the progress made in dentistry. It has been claimed that meddling too much with dentures would result in the loss of the teeth of the American people, and in time produce a race insufficiently supplied with the means of mastication. He denied that there was any such danger, and declared that in no other country could people with teeth so nearly perfect be found as in America, and this, he claimed, was due largely to the advanced ideas of American dentists.

The science of microscopy has made so much advance that it may be brought to the notice of these associations. We all know

of enamel, dentine, cementum, but we also should know and understand the minute anatomy of these tissues. The development of the temporary and permanent teeth need to be traced with more thoroughness. The life of the tooth is neither in the lime-salts or the basis-substance. Suitable specimens, when obtainable, should be kept moist in chromic acid solutions. Dentine is claimed to be analogous to bone and other tissues. The cells of plants are all imbued with life, from the roots to the leaves. Is enamel alive, or is it merely lime-salts? In the interstices between the prisms there is undoubtedly life present. It is very difficult to study the enamel, because it can not be softened suitably, but must be ground. If acid is used, the lime-salts are dissolved, and chloride of gold demonstrates the presence of living tissue. Pathology furnishes proofs of life. In the process of decay, reaction takes place, which is analogous to the death of bone. The formation of secondary dentine is a physiological and pathological process. He further commended the establishment of chairs on dental microscopy in the dental colleges, as also the original scientific work of Black, Sudduth, Williams, Bödecker, Heitzman and others, trusting that their researches may be the production of much good. He did not believe in catering to foreigners, but instead of so doing to put all energy into the pursuit of original work.

Dr. Abbott then introduced Dr. B. H. Catching, president of the Southern Dental Association, who read a paper entitled, "Is the Average Dentist of To-day a Specialist in Medicine?" He considered that dentistry was a specialty in medicine, but he was assured that too many dentists considered it a trade and practiced it as such. They were satisfied with the crude practice of dentistry learned by them years ago. The usefulness of the progressive dentist was of incalculable benefit to humanity, and therefore advancement was to be desired. There were those, he said, who argued that medical education was of no importance in the practice of dentistry, but the speaker did not agree with this position. Dentistry had been practiced in the past as a combination of much mechanical skill and a very little knowledge of medicine. It is now almost the opposite. The mechanical ability was still indispensable, but far more necessary was a scientific knowledge of medicine and surgery. The medically educated

men are the leaders in the profession. Public opinion is against dentistry as a separate profession. Dentistry can not become one of the great professions.

He thought that the increase of undesirable practitioners should be restrained in some way, but while this should be done at the college door, it had grown to be the custom that the only restraint was at the State Board and through the dental examiner. That dentistry is a science is demonstrated by the fact that it is a branch of the education of the medical school. For the higher education of dentists, he favored post-graduate schools and institutes of that nature, made necessary by the steady advancement of the science. The dentist should be educated as an M. D., and receive that degree.

In discussing these papers, DR. JAMES TRUMAN, of Philadelphia, coincided with many of the views advanced by Dr. Catching. He did not think it possible or practicable to make good dentists out of medical men. The M. D. is not at all necessary. We can practice just as well under the D. D. S. The courts sustain the Dentist in the performance of his professional duties. He referred to a popular idea which is to the effect that no dentist can perform a surgical operation without being responsible to the law if any harm should come of it. In denying this, he said a dental surgeon has as much right to operate in the mouth as any other surgeon. To claim that this is not a fact lowers the standard of dentists in public esteem.

DR. N. J. ROBERTS, of Waukegan, Ill., asked Dr. Truman to explain the law, as he was under the impression that a dentist had no right to operate further than the removal of teeth. By this he meant that after operating, a dentist, unless he had acquired also the degree of M. D., could not follow up the case, in case medical treatment was necessary.

DR. GEO. W. CUSHING, of Chicago, stated that if an operation was successful, there was no danger, but if a mistake is made, be it by a dentist or M. D., he will be held responsible for it.

DR. W. H. H. THACKSTON of Farmville, Va., called attention to the fact that some of the most intricate surgical operations were performed by dentists. Hullihen had performed operations in which he was fully sustained.

DR. J. J. R. PATRICK of Belleville, Ill., thought it quite diffi-

cult to draw the exact line where the rights and privileges of the dentist cease and those of the physician begin. The lawyer draws the line and no mathematician could follow it. Whosoever is guilty of malpractice and criminal negligence will be held responsible.

DR. W. H. MORGAN, of Nashville, Tenn., objected to the assumption in Dr. Catching's paper that the degree of M. D. was higher than that of D. D. S. It was not so, he said—one was fully equal to the other. The teaching in dental colleges is equal to that of medical schools. As a general rule the dental student is more apt and energetic and more readily acquires knowledge than the average medical student. The mechanical idea, is misapprehended, mechanics is an established science as well as chemistry, both can be demonstrated while much of medical practice is but theory and opinion.

DR. T. W. BROPHY, of Chicago, did not agree with the plan of making dentistry a specialty of the practice of medicine, and making doctors first and dentists afterward. The plan had been tried and had proved an absolute failure. If anything was to be done, it would be best to increase the time of study for the education of dentists from two years to three or five years.

DR. J. Y. CRAWFORD, of Nashville, Tenn., does not believe that the knowledge of medicine is detrimental in the practice of dentistry, and that dentistry was not a specialty in the practice of medicine.

DR. C. N. PEIRCE, of Philadelphia, favored the application of the students principally to those branches where knowledge will be of the most practical advantage. He did not consider it a good plan to extend the range of what the dental student should learn beyond what is essential. The collateral branches can be taken up and pursued with medical students.

DR. W. XAVIER SUDDUTH, of Philadelphia, said in regard to the dento-legal aspect of the question of privileges of dentists and surgeons, that while the latter had all the opportunities their profession offered, cases were often brought against them in the courts, for malpractice. He held the opinion that if a dentist can not show that he possessed the necessary knowledge to follow any given case through all of the sequelæ, he will find himself in

a serious position. If he also held the M. D. degree his chances before the courts and juries of the land would be much better.

DR. ROBERT R. FREEMAN, of Nashville, Tenn., stated that dentistry was recognized by the medical fraternity as a specialty of their profession, and no matter what opinions dentists may hold, that position can not be altered. Medicine is too great, too extensive to be entirely understood and practiced by any one man, hence the specialties. Dentistry came as a specialty of the great healing art, at the beckoning of the need which existed for it.

DR. GEO. J. FRIEDRICHS, of New Orleans, La., admitted that we may be called specialists, but that the public does not now, nor will it ever recognize us as anything but dentists. The principal difference seems to be that the M. D. may practice dentistry while the D. D. S. can not practice general medicine.

In closing the discussion DR. B. H. CATCHING, of Atlanta, Ga., stated that it did not matter at what end of his college life the student received his medical education, if he only received it. In case of a death from anæsthesia the physician is called in to give the certificate, and the dentist goes to jail. A medical education is very valuable indeed and he urged that eventually it may be made absolutely necessary. A lecturer in the dental department of one of our colleges says that dentists will eventually be compelled to pass medical examinations and take the medical degree.

WEDNESDAY, AUGUST 29.—MORNING SESSION.

The committee on

OPERATIVE DENTISTRY

offered its report through DR. E. T. DARBY, of Philadelphia. Attention was called to the "Immediate Filling of Pulpless Teeth," so extensively advocated during the past year, and the scientific investigation of the subject was invited, in order that its advantages if any, may be pointed out. The subject necessitates inquiry and reliable statistical information before the practice can be accepted generally. The revival of the practice of trans and re-plantation under modern antigerimicidal precautions, and the practice of implantation were also mentioned. Experience, and data which are now available, prove, that the operation when performed under favorable conditions, promises success. A number of cases, of different operators have been under observa-

tion and but few failures have occurred. Copper amalgam has also attracted the attention of the profession. One of the papers reported, was by

DR. W. STORER HOW, of Philadelphia, on

DENTAL REPAIRS BY PORCELAIN INLAYS.

The cavity should be prepared by means of suitable burs. a set of six inlay burs are now being manufactured for this purpose. A square end fissure bur will fairly answer the purpose. It is a good practice to make inlays into the cavities of teeth out of the mouth and then to make cross-sections of them; this will enable one to observe how deep these cavities may be made before they encroach on the pulp. The cavity should be entered at the proper angle, a steady and firm grasp of the engine hand-piece is necessary to prevent chipping or marring the border of the cavity, which should be made carefully cylindrical. The inlay is ground so as to fit the cavity as nearly perfect as possible. The difficulties in the way of the permanency of this method of repairing the destructions of caries, lies in the unreliability of the cement with which the inlay is fastened into the cavity. It is also for this reason that no positive data as to the permanency of this class of work can be given, as it entirely depends on the lasting qualities of the cement used. It is reasonable to infer that the more carefully the inlay is fitted to the margins of the cavity and hence the less the cement, the better the chances of success. In temporary cases the method is certainly advisable, and it is to be hoped that soon it may be fully as advisable in permanent cases. As the inlay is transparent, the color of the cement used modifies the color of the inlay, hence a suitable color should be used; the eye is soon trained to properly stain the cement to secure the desirable color. Gutta-percha can also be used, it makes a perfect joint. The gutta-percha is placed in the dry cavity in a softened condition, the inlay is then pressed into it with a warm instrument, and held in position with a cold one until the gutta-percha has hardened. The inlay can then be ground and polished at the same sitting. The gutta-percha should entirely surround the inlay, thus covering and protecting the margin of the cavity. These inlays may be used not only in round cavities but in any shaped cavities, when properly ground and fitted. They can also

be used for capping pulps. If used properly they will prevent much of the unsightliness due to the extensive use of gold.

DR. J. J. R. PATRICK, of Belleville, Ill., then read a paper on

ARTIFICIAL CROWNS.

The attachment of substitutes to the roots of teeth is not properly understood. In order to secure the best results of crown work it is absolutely essential to use a band which will encircle the root and press under the free margin of the gum, its proper adjustment and close fit is absolutely essential. The fact that the root end to be fitted is the base of a cone makes it more difficult to secure a perfect adaptation of the band to the root. This can be secured, if one side of the root is beveled to form a shoulder over which the band is stretched. Dr. Patrick illustrated the manner in which this may be done. A post is very seldom needed, it can be used as a rule only in the upper central incisors, cuspids, one of the roots of the first bicuspid, the second bicuspid and the palatal root of the molars above. The cuspids, bicuspids and occasionally the molars, below. When a post is used it should taper like the root; it should not be so large and long as to require the undue sacrifice of tooth structure. A conical gold screw, split at one end to enable it to hold the crown, is the best post which can be used. Do not use wire or other materials for taking the measure of the root, but take a strip of gold plate, surround the root and pinch it together until it snugly fits the tooth. When a metal cap is used, it can be telescoped outside of the root-band. The metal crowns are made by means of a crown machine, the result of the inventive faculty of Dr. Patrick. The articulation is secured by raising or lowering the cusps of the artificial crown with a pair of pliers made for this purpose. He objects to the making of so-called cheap crowns, believing that the best skill of the operator is essential to secure good results. Does not approve of the striking up of crowns and the necessary cutting out or hammering out of folds in the metal, or of the repeated soldering which destroys the pliability of the metal and makes the gold harsh.

DR. C. EDMUND KELLS, JR., of New Orleans, La., then read a paper on the

CONDUCTIVE PROPERTIES OF FILLING MATERIALS.

By means of a battery connecting with a bell, the respective

conductive properties of various filling materials were demonstrated, and it was shown that the oxyphosphates and oxychlorides are not reliable as non-conductors, and should not be used for the capping of pulps, or in the proximity of pulps unless an intervening layer of gutta-percha be introduced. Gutta-percha was shown to be the most suitable of fillings to be used to prevent the sudden thermal changes to which the pulps of teeth attacked by caries, are liable in the mouth, and it was recommended as a material to be inserted between the metal filling and the pulp, upon it may be placed the oxyphosphate or oxychloride if the gutta-percha alone is not a sufficiently firm foundation for the permanent filling.

DR. THOS. L. GILMER, of Quincy, then described a quick and easy method of making an

ARTIFICIAL CROWN.

without much expense, and one which is intended for those cases where the cost of the operator's time places crown work above the means of the poor.

Prepare the root in the usual manner, make a platinum band to fit the root. allow the band to be about half the length of the crown to be made, notch it in the following manner :



About half way down the width of the band drill holes through the platinum at the point where the notch ends, then bend the zig-zag parts of the band out, and put the band on the root. Now build up a crown with modeling compound or wax, take the articulation and shape the crown of modeling compound or wax as near to what it shall be, as possible, while in the mouth. Remove the crown of modeling compound or wax and band together and shape up the crown as you wish it to be when finished. Now invest in plaster of paris up to the margin of the band; after the plaster has hardened pour the other half. Take apart and remove the modeling compound or wax, drill two holes in the plaster, one for pouring in Weston's or Watt's metal, and the other for allowing the air to escape. Make

one of the holes cone shape, and whittle a piece of wood to fit it. Pour the metal used, when at a consistence so it barely flows, into the mold through the cone-shaped opening, and by pressing it in with the wood, it will be driven into all parts of the mold and out through the vent hole previously provided. When cool, open, cut undercuts into the metal inside of the crown, polish and cement to the root. For roots situated in the posterior part of the mouth the crown may be used in this way, for the anterior teeth a porcelain face can be used with a gold band. Fit the gold band and the porcelain face to the root, build up the remainder of the crown with the modeling compound or wax and proceed in the same manner as described for an all metal crown.

The discussion which followed the reading of the report and the preceding four papers, was principally confined to the paper of Dr. Kells.

DR. THOMAS FILLEBROWN, of Boston, suggested that experiments be made with dentine, and if it is found to be as poor a conductor of thermal changes as enamel, discs of dentine covered with gutta-percha could be used between the pulp and the metal filling.

DR. WM. H. ATKINSON, of New York: Enamel is the non-conducting protector. We know that dentine will not protect from thermal changes, and find proof of this statement in those who are advanced in age, and in whose mouths attrition has removed the enamel.

DR. C. N. PEIRCE, of Philadelphia, believed that white gutta percha is one of the best non-conductors we have. It is merely a mechanical covering for an exposed pulp, and does not yield the protection a material would which has a slight escharotic or antiseptic property.

DR C. EDMUND KELLS said that he recommended the use of a layer of gutta-percha somewhere between the pulp and metal filling. It is his opinion that all exposed pulps which have been capped eventually succumb.

DR. J. J. R. PATRICK questioned the propriety of saving parts of a pulp alive. The economy does not necessitate the preservation of the pulp, or it would attend to that itself. In the natural order of things the pulp diminishes as age advances. It has never been proven that the pulp when capped retains its life. No pro-

cess of repair can be in progress under a capping, as there are no absorbents in the pulp, at least none have ever been discovered.

DR. WM. H. ATKINSON cited a case which came under his immediate observation in which a pulp had been exposed, was capped and was years after found by him alive and well.

DR. W. W. ALLPORT, of Chicago, stated that he and others had seen cases of capping which had beyond a question proven successful. He believes that there is less of pulp-capping done now than formerly. When the pulp is entirely exposed and has given pain, the chances of saving it have diminished.

DR. ROBERT R. FREEMAN, of Nashville, Tenn., did not like to notice the growth of a tendency to destroy pulps. He favored the retention and preservation of them; he believes that he is successful in saving many of the cases that come under his care. He has seen a case where the pulp was exposed for two years, was then capped temporarily, and at the end of another year the pulp was found alive and well.

DR. JOHN C. STORY, of Dallas, Texas, has lost entire faith in the efficacy of any kind or method of capping, and now resorts to the destruction of the pulp as the safest means of treating a tooth whose pulp has been exposed.

DR. JUNIUS E. CRAVENS, of Indianapolis, Ind., did not believe that the pulp was of any value to the tooth after it had been fully developed. It was not his opinion that many pulps retain their vitality after having been exposed and capped, hence it was his practice to generally devitalize exposed pulps in preference to capping them.

DR. W. H. MORGAN, of Nashville, Tenn., was of the opinion that if the pulp were really useless in the tooth nature would remove it as soon as it had performed its functions. He advised the conservation of the pulp in all those cases which promises any favorable termination. The pulp should be retained intact as long as possible.

DR. J. TAFT, of Cincinnati, O., followed in the same channel as the previous speaker, believing that the pulp is alive and in the tooth for a purpose, its vitality supports the less animate portions of the tooth. After the pulp has been destroyed, the enamel and dentine are more prone to break down. Pulpless teeth more readily decay than others. The structure of pulpless

teeth seems to disintegrate or deteriorate, they do not withstand the force of attrition as well. The pulp supplies the tooth with nutrition and retains the vitality of the dentine. Of course the conditions surrounding the case should be taken into consideration. Discrimination as to future possibilities should be exercised, the condition of the constitution and the disease-resisting properties should be taken into consideration. Sometimes a person is in good condition at other times not. Consider the length of the time of exposure, its extent, the amount of irritation to which it has been subjected, make use of your medical knowledge, discriminate and conserve this tissue whenever possible.

DR. E. T. DARBY, of Philadelphia, is in favor of capping the pulp whenever possible. He cited a case where the pulp was preserved for ten years after having been capped. He has seen cases in which exposed pulps lived for twenty years after capping. He first covers the pulp with a paste of oxide of zinc and creosote, then flows a layer of oxychloride of zinc over this, which in turn is followed by a layer of oxyphosphate of zinc, the latter becomes harder and makes a better foundation for the filling. Gutta-percha is the worst of materials for capping pulps.

BUSINESS MINUTES.—At one of the sessions of the joint meeting, resolutions were adopted memorializing Congress to remove the tariff from dental goods. The resolutions were as follows:

“**WHEREAS**, it is the sense and belief of the American Dental and the Southern Dental Associations, in joint meeting assembled, that the tariff on imported dental and surgical goods works a hardship upon the profession and the public, therefore, be it

“**Resolved**, That we memorialize Congress to abolish all duties upon imported dental and surgical instruments, apparatus, and supplies.

“**Resolved**, That the secretaries of the associations be instructed to forward the resolutions to the proper authorities in Congress, and that each member of the associations be requested to use his influence with the Congressman of his district to vote to place the above mentioned goods upon the free list.”

The American Dental Association set aside a page of its transactions whereon to spread the resolutions adopted in memory of Dr. Geo. W. Keely, which was offered by a committee for the

purpose and composed of Drs. H. A. Smith, E. T. Darby and George J. Friedrichs. Suitable resolutions offered by a committee consisting of Drs. J. Taft, W. H. Morgan and W. H. Atkinson were also offered in memory of Drs. Dutch, Fitch, Driggs and Corson, former members of the association. A committee consisting of Drs. J. Taft, W. C. Barrett and E. T. Darby was appointed for the purpose of preparing an official register of dental graduates, under the auspices of the American Dental Association. A resolution was also adopted restricting members of the association from using professional cards for any other purpose than the announcement of name, place of business and town or city address.

[*To be continued.*]

SOUTHERN CALIFORNIA ODONTOLOGICAL SOCIETY.

October 2d and 3d, 1888.

PROGRAMME.

ESSAYS.—1—Dr. J. C. McCoy, Orange, Cal.; President's Address. 2—Dr. I. M. Case. Subject, Pain Obtunders; Discussion opened by Dr. L. W. French. 3—Dr. W. R. Bird. Subject, Theory of Decaying Teeth; Discussion opened by Dr. R. R. Bourne. 4—Dr. R. A. Todd. Subject, Practical Points; Discussion opened by Dr. G. E. Purnell. 5—Dr. E. L. Townsend; Immediate Root Filling. 6—W. D. Babcock, M. D. Subject, Necrosis of Superior Maxillary Bone; Result of Alveolar Abscess, Case in Practice. 7—Dr. G. E. Purnell. Subject, New Appliances and New Inventions. 8—Dr. J. C. McCoy. Subject, How to Educate our Patients. 9—Dr. E. L. Townsend. Subject, Operative Dentistry. To be discussed as follows: Pyorrhœa Alveolaris, J. C. McCoy; Implantation, J. S. Crawford; Root Filling, J. M. White; Gold Filling and Capping Pulps, F. M. Palmer.

CLINICS.—*Wednesday.* 1—Dr. R. H. Shoemaker; Gold Filling, Bonwill Electric Plugger. 2—Dr. L. W. French; Gold Filling. 3—Dr. F. M. Palmer; Gold Filling, Mullett Electric Plugger. 4—Dr. E. L. Townsend; Amalgam Crown. 5—Dr. G. Knepper; Continuous Gum Plate. *Thursday.* 6—Dr. R. A. Todd; Contour Filling, Cohesive Gold. 7—Dr. R. W. Anderson; Gold Filling. 8—Dr. E. L. Townsend; Logan Crown with Ferrule. 9—Dr. J. M. White; Contour Gold Filling with Steurer's Plastic Gold. 10—P. R. Reynolds; Corundum Point and Disk Making. 11—Dr. G. E. Purnell, Non-cohesive Gold Filling. 12—Dr. E. L. Townsend; Immediate Root Filling.

THE DENTAL REVIEW.

Devoted to the Advancement of Dental Science.

PUBLISHED MONTHLY.

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LOUIS OTTOFY, D.D.S.

J. G. REID, D.D.S.
L. L. DAVIS, D.D.S.

NATIONAL ASSOCIATION OF DENTAL FACULTIES.

The fifth annual meeting of the association of faculties was held in Louisville, Ky., commencing August 27, 1888. After calling the roll of members, considerable time was spent in getting down to business. To an outsider it looked as though the representatives of the faculties present were afraid that some radical change was about to be proposed by some one, that would affect the business interests of the schools. Finally this apparent feeling wore off, and as no incendiary motions were presented, the professors present began to offer resolution after resolution looking toward a lengthening of the time from matriculation to graduation. The first bomb of this character was one offered by the Louisville College of Dentistry, in substance being to the effect that no student should be allowed to graduate until 16 months after matriculation. This was adopted, although several amendments were offered increasing the time to 24 months and 30 months. The next day the resolution was rescinded. The prevailing sentiment, after a full discussion, was in favor of compelling a student to attend three regular terms of instruction, in separate years, of five months each. Very few of the gentlemen present favored a nine months term of consecutive work. As long as there are two schools in the country having summer courses of instruction (University of California and the Louisville College) there will be trouble in the college association concerning students from these schools. As the case now stands, a student may enter either of the above-mentioned schools and complete a regular course and get his credentials, and present himself at one of the colleges whose term of instruction begins about

October 1st, or a little later, and having the privilege of entering the school 20 days after the opening, may be regularly entered as a senior student. (As the Department of Dentistry of the University of California now makes it obligatory for a student to attend a nine months' term, beginning March 1st, it is not seen by the writer how a student *could* get his credentials in time to enter one of the Eastern colleges, even counting the twenty-day limit; but in one or two cases this has been done. It would be easy for a student of the Louisville College to do this, as the term closes about the 20th of June. It would be impossible for a student of any winter term college to enter the Louisville College without waiting one year, as the lectures begin about January 20th and none of them (winter schools) close the college year before the last of February or first of March. A student of an Eastern college could enter the California school immediately after taking his examination, as he would be able to avail himself of the twenty-day limit. An ambitious student under these circumstances could enter a five months' school October 1st, remain until the close of the term, take his examinations, go to California and enter the Dental College, and come up for graduation at the end of November, fourteen months after his first matriculation. To take another view of the case, a student of the Louisville College could enter that school January 29—to be exact—remain until June 20, enter a five months' school October 1st and come up for graduation the last of February, only thirteen months after matriculation.) We can not understand how it is, that college authorities fail to understand, that the above hypothetical cases, are *absolutely prohibited* by the standing rule of the Faculties' Association adopted at the first regular meeting in 1884: "Attendance during two full regular courses in separate years required before examination for graduation. (*New York, 1884.*)" The resolution, which is mandatory, has been violated during the past year by at least two schools (we are credibly informed). The method of interpreting the above resolution, if no other is presented which will be satisfactory, would be to determine the scholastic year as beginning on September 20 and ending it on the 19th of the succeeding year, then there would be no such lack of comprehension as was exhibited at the last meeting of the Association. Some one must suffer for the public

good, and as a large majority of the dental schools of the United States are winter term colleges, they should fix the matter definitely at the next meeting. We will at a future time take up some other questions of interest to the above association.

CAPPING PULPS.

For some time past this subject has been discussed in nearly every meeting of a dental society that we have attended. At the late meeting in Louisville several gentlemen proceeded to enlighten the members present by discussing it. In all the discussions that we have listened to, the trend of thought and expression has been in favor of the destruction of the pulp when exposed. We venture to suggest that the pulp is a much abused organ, and that it ought to be allowed to plead for itself once in a while. If we were so inclined we might assert that the pulp in the first place is useful from an esthetic standpoint in all anterior teeth, at all ages. Second, it is useful in all growing teeth. Third, the retention of the pulp has a tendency to promote skill on the part of the operator. Fourth, the pulp alive and robust prevents pericemental troubles and abscess in a large measure. Fifthly and lastly, the pulps of teeth in the young give great promise of usefulness, even when capped under very unfavorable circumstances, and nearly all are worthy of a trial to save them, for the first reason mentioned in this article. Discrimination and judgment in the attempts to cap pulps are frequently overlooked, and from these causes, combined with improper treatment, many pulps will die that otherwise might have been saved.

THE NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

At the annual meeting of the above association very little work was done, save that of making a list of dental colleges, whose diplomas are recommended to State Boards of Examiners for recognition. No provision was made for the recognition of the diplomas of colleges now extinct. This should be done at once, as a matter of information to State Boards and for their guidance. The Illinois State Board of Health has published a list of living and dead colleges, located in North America, for its

own guidance as well as for the use of other State Boards of Health. If not too late, we would suggest to the Secretary and officers of the association of examiners, that the few defunct colleges could be added to the list, in their forthcoming proceedings and thus make it complete. The deliberations of this body are characterized by uncommon good sense, and the members show a wise conservatism in their work, which must commend the association to the body of the profession interested in a high standard of education, as deserving of their earnest support. The meeting was harmonious in the extreme, and no fears need be entertained of the future work of the association being poorly done.

DOMESTIC CORRESPONDENCE.

COMBINING AMALGAM AND CEMENT.

To the Editor of the Dental Review :

DEAR SIR:—Having read the article by Dr. Tileston in the August DENTAL REVIEW, I should like to add a few lines corroborative of, and supplemental to, his statements concerning the use of a mixture of amalgam and cement for filling teeth.

My attention was first called to the matter in repairing cement fillings having alloy linings. The cement was always very hard, with no sign of disintegration. There seemed to have been a chemical action, a fusion, the cement being slightly discolored for a little distance from the amalgam.

I began experimenting, and with most gratifying results so far as can be judged from a three years' experience. My opinion is that an amalgam composed of 5 parts in 100 of copper, with the balance equal parts of tin and silver, will give the best results.

Pure copper amalgam seems to make a brittle, crumbly mixture, as will other amalgams if used in too large proportion, though if the cavity is all ready, and the filling instantly inserted, pressed down and smoothed off, then strictly let alone until hard, a very large amount of amalgam can be used. The best fillings will be made for general approximal and contour work, I think, by using about one-third (in bulk) of amalgam, with a rather slow setting cement. Then if desired pure amalgam can be rubbed over the

filling, and it will stick there. I would press out all excess of mercury until the amalgam had a soft, waxy feeling.

This compound makes a good solid foundation for any large amalgam filling and can be forced under over-hanging walls and frail cavities nearly filled; with the assurance that the balance of the filling will be securely anchored to it.

Time alone will determine, but so far I believe it the best filling we have for frail teeth not exposed to view. It certainly has those most desirable qualities, adhesiveness and stability of form, apparently not changing in the least during the hardening process.

Yours truly,

LaSalle, Ill.

G. W. DENNIS.

IMPLANTATION.

To the Editor of the Dental Review :

DEAR SIR:—This morning I received the second tooth which you have so kindly sent me. I have not done anything with the first one yet, but will commence the work of decalcification tomorrow. I would like to receive such teeth from different dentists throughout the Northwest, and learn the percentage of failures, and study each case of failure separately. Younger's operation is too *young* to determine as yet the degree of its permanency. I give it as my opinion, however, that it is destined to meet the fate of many other fads. A few years since the Wisconsin State Dental Society had a member who acquired the craze of replantation. After he had practiced it about a year he introduced the subject at one of the meetings, and like some who cap pulps "without a single failure" he became a trifle "cranky" on the subject. He presented case after case all seemingly successes. Another year, however brought a less number of cases, but each showed decisive results of the fad. The border (gingival) of the alveolus showed signs of absorption, in some cases revealing the root for a distance of a quarter of an inch from the neck of the tooth, and one case in Milwaukee in the mouth of a physician who had consented to become a martyr to the cause of science, entire absorption had occurred within the year. At the same time and in all cases the cementum showed the same bay-shaped excavations as in case of failure of an implanted tooth. Every thinking dentist knows the

peridental membrane accompanies the root when extracted. The principal fibers seem to be less securely attached to or in the alveolar wall than in the cementum. In all failures which I have seen of cases of replantation, the membrane seemed to have remained attached to the cementum, except the last three or four of the Wisconsin Society member's operations. He had changed his methods somewhat and among other changes he removed the membrane from the cementum and polished the entire root on the iathe, yet the result was the same. The root became closely invested within the alveolus, only in time to become loosened by absorption of the alveolar border, which finally progressed to that extent, that loss of the tooth followed. Such cases showed the same territories of dissolved cementum as the others. I fail to see any difference between replantation as practiced by the gentleman referred to and the process of implantation, so far as final results are concerned. I speak of those cases which have come under my own observation. In the one case of extraction and subsequent replantation the osteoblastic layer of the peridental membrane was of course removed with the membrane, leaving none within the alveolar wall. In the Younger operation, the walls of the alveoli created by the drill or knife, are equally devoid of osteoblasts. We have yet to learn that those of the peridental membrane of the implanted tooth ever exercise their healthy functions. On the contrary there is in every case of failure, that which I deem good evidence of a fact that they do not, and if so, how can we account for the fact that there is a deposit of osseous tissue about the root of the implanted tooth? I have my opinion regarding that question in case of the implanted tooth in particular. An examination of a section of alveolar process, with an objective of sufficient amplification, shows the Haversian canals to be lined with osteoblasts. If during the operation of creating the artificial alveolus, the instruments passed through one of those cavities (as it is sure to) there is a chance for a further proliferation of those "bone builders" which can perform their proper functions sufficiently, to completely inclose the root in a new growth of bone. In case of the replanted tooth, the fracture of the walls of the alveolus during the process of extraction, may furnish like conditions. Regarding the subsequent dissolving of the cementum, I have no well defined theory; but that it is

through the agency of osteoblasts, but from what portion of tissue they arise I have no well defined idea. I am desirous of investigating the subject as far as conditions will permit. Thanking you for your co-operation, I remain,

Janesville, Wis., July 28, 1888.

Yours truly,
GEO. H. McCausey.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

To the Editor of the Dental Review:

DEAR SIR.—In the June number of the REVIEW there appeared in "Nemo's" contribution the following: "We, in England, rejoice to find there is a strong tendency amongst our American brethren to condemn the system of patenting professional methods and appliances. This system is illiberal, selfish and grossly unprofessional; and we look forward in the near future to the stamping out of what has hitherto blotted the escutcheon of dentistry. Let every American society imitate the Odontological Society of Great Britain, by refusing to receive into membership, anyone who chooses to protect for his own selfish gain, what he should only be too proud to bequeath to his brethren for the benefit of suffering humanity." The "illiberal, selfish and grossly unprofessional" portion of the article is the same kind of refreshingly logical argument the improvident and impecunious socialist orator regales his hearers with when a thrifty, enterprising capitalist is under consideration, and if the foregoing quotations are founded upon fact, it shows that the dental profession in the United States is drifting into a dangerous channel. In the first place, no dental society or organization in the United States occupies the same position as the Odontological Society does here, either as to its internal workings or its outside influence upon the profession. American organizations possess the inherent qualifications for furnishing their own papers, and demonstrating their own practical ideas, in contradiction to which, the society here draws largely upon the medical profession for their regular contributions; and as regards practical demonstrations, they are conspicuous by their absence. To be sure, organizations enjoy the privilege to decide who their members shall be, but at the same

time they should not by invidious legislation, burn the bridge, that has so safely carried them to their present enviable position, but should rather protect and reverence that fabric in the body politic of dentistry, that has done more than any thing else to place American dentistry in the van of the profession the world over.

In regard to the patenting of dental methods and appliances, much may be said both pro and con, but no one, save the veriest bigot and fanatic would, for a moment, contend that a man has no right to dispose of the product of his own brain in any available legitimate manner. Should he be so fortunate as to be in a position enabling him to present gratuitously his ideas to the profession, so much the better. But should he be one of the less blessed in that direction, why, because he occupies a more humble sphere, should he be commanded to "stand and deliver" without recompense by his more pretentious brother who would unblushingly step to preferment by the means he would wrest from the elaborator, at the dictum of a few whose barrenness of originality is only exceeded by their self-appreciation?

I think it may, with safety, be left to the individual, whether he shall protect his ideas or make a gratuity of it to the profession. In the past the profession has certainly lost nothing by so doing, so with this precedent it may with prudence defer any proscription legislation, should anything of the kind be contemplated.

I think though that the line might, with consistency, be drawn discouraging the protection of secret remedies and medicinal preparations, for they plainly are immediate agents "for the relief of suffering humanity," this would secure to those who may be in danger of an apoplectic attack, owing to the surcharged condition of their brains with strictly scientific (!) ideas, an opportunity of presenting their inestimable boon to the profession whose interest they have so much at heart.

Good operative capacity, and the best results therefrom, are more easily attained when our instruments and appliances are of the most perfect nature, place a premium upon their development and they will be forthcoming; withdraw this encouragement and the reverse will be the result.

The patent laws of the United States have afforded a comparatively inexpensive protection to the inventive genius of that

country, in direct contradistinction—until very recently—to the state of affairs existing here, and our profession should be the last to barricade an avenue, through which it has achieved its greatest triumphs and done so much to place it at the head and front of professions in which science and art are so intimately blended. As a rule in professions, a man's best capital is the quality of his cerebral fibre; should his natural tendency incline towards literature, he proceeds very promptly to copyright his works. We don't hear any strong remarks about this little diversion being "grossly unprofessional," although wherein it differs from patenting an appliance I am unable to differentiate; and being an author, he is considered quite an acquisition by the society he elects to become identified with; but how different some would have it with the ingenious and dexterous professional co-laborer, who evolves and perfects the means the other describes in such a learned manner, and in many instances theorizing entirely about appliances and operations without any practical knowledge of the former, and no executive capacity for the latter.

Should some dentists be haunted by the nightmare of monopolies as regards dental patents, there exists a splendid avenue of escape, and one that will afford those unselfish members of the profession—who would willingly adopt an idea if it cost them but little or nothing—a chance of becoming public benefactors; let them purchase the patent—from the, in all probability poor, country cross-roads' dentist—and present it to the profession, I am sure this would be appreciated by men, that having seen a good thing, have heretofore never been averse to paying for it in order to utilize its advantages.

Let the profession in the United States consider well this subject ere they take a step they some day may regret, and not forget the fact that they are *dentists*, and that their calling requires a greater scientific, artistic and manipulative capacity than does any other, therefore, let the integral portions go on, hand in hand without any invidious comparisons being drawn, and the result will be a profession whose aims will be a unit in harmony and capacity, instead of one riven with dissensions brought about by a few bumptious egotists, whose fermentive natures require a thorough application of the moral salicylate of the practical and

thoughtful of the profession, to negative a movement that is professional socialism of a type unworthy the endorsement of any man laying claim to the possession of a liberal mind.

London, Eng.

Yours truly,

W. MITCHELL.

REVIEWS AND ABSTRACTS.

THE PRACTICE OF MEDICINE, OR THE SPECIFIC ART OF HEALING, BY I. J. M. GOSS, A.M., M.D. W. T. KEENER, 96 WASHINGTON ST., CHICAGO, 1888.

This volume contains 552 pages of reading matter, and is subdivided into 35 chapters. The first seven chapters deals with the following subjects: Principles of Medicine, Diathesis, Vegetable Parasites, The Laws of Therapeutics; or, the Specific Action of Medicines; Dietetics, Use of Medicines, General Remarks Upon the Leading and most Prominent Symptoms of Disease.

The following chapters are devoted to the diseases and treatment of various organs of the body, according to the "eclectic doctrine." It may be safely said that *isms* and *pathys* are a menace to the principles which should govern the general practitioner of medicine, and, to use the words of the author, "it will be a rich boon to suffering humanity when physicians shall cease the routine prescribing, and, ignoring all sects in medical practice, study thoroughly all their remedies so as to fit them to morbid conditions." That the scientific physician does this can not be gainsaid.

The author in discussing the diseases of the mouth and throat omits very much that ought to be said, and the little that he has to say, especially on dentition, odontalgia and decay of the teeth, is considered rather more briefly than the importance of the subject deserves. It is a lamentable fact which can not be pronounced in language too strong, that medical writers who furnish text books which are in the main supposed to embody all the pathological conditions of the human body, are so adverse or negligent in furnishing proper information about the dental organs and their diseases, with the treatment, which would be suitable to the demands of the present day. The dental organs are just as important a part of the human economy as can well be

imagined, and just as susceptible to disease as any other tissues of the body, and yet they are passed by with simply a notice, which is more near the nature of an apology than anything else.

We give the author of the present treatise some credit for giving the space of two pages to a consideration of these important subjects, but should wish the matter therein contained to be in accordance with more modern teaching and undeniable facts; as it now stands the ordinary practitioner will receive but little enlightenment, for the "grandmother" ideas about "teething" and "toothache" are still being taught.

In reviewing the articles on the various other subjects throughout the work, the reader can not fail in noticing the simplicity the author has of expressing in a concise way what he has to say. This is a marked feature of the work and will be fully appreciated by all readers; not a word is wasted in any part of the text, every subject is treated with completeness and is in accordance with, and based upon recent scientific research. The work is as free from typographical errors as could be expected for the amount of matter in it. The paper is excellent, the binding handsome and substantial, and both author and publisher are to be congratulated.

BOOKS RECEIVED.

NATURE'S HYGIENE, by C. T. Kingzett, F.I.C., F.C. S., London; Ballière, Tindall and Cox, London; third edition, cloth, pages 439.

Ptomaines and Leucomaines, or the Putrefactive and Physiological Alkaloids, by Victor C. Vaughan, Ph.D., M.D., and Frederick G. Novy, M.S., Lea Brothers & Co., Phila.; cloth, pages, 316; price, \$1.75.

PAMPHLETS RECEIVED.

Facts concerning the teeth, published by the Minneapolis Dental Society.

An operation for simple forms of entropium, by Frank Allport, M.D., Minneapolis, Minn.

Monographie des Sechsjährigen Zahnes (Monograph of the sixth-year molar), by Prof. E. Andrieu, M.D., Paris. Translated into German by B. Manassewitch, Geneva.

Die Infectiöse Arthro-dentäre Gingivitis (Pyorrhœa alveolaris), by Dr. Galippe, Paris. Translated by B. Manassewitch, Geneva, published by Louis Henser, Berlin and Neuwiël.

Some remarks on opening the mastoid process, by Frank Allport, M. D., Minneapolis, Minn. (Reprinted from *Northwestern Lancet* and *American Journal of Ophthalmology* 1888.)

MEMORANDA.

Dr John B. Morrison, of Indianapolis, has constructed an electric plugger which can be taken apart and put together again without using a screw or nut. He uses it in his own practice whenever occasion requires.

The next meeting of the Southern Dental Association will be held in Galveston, Texas, on the third Tuesday of August, 1889. The members of the Association will be the guests of the Texas State Dental Association.

The seventh annual meeting of the Central Illinois Dental Society will be held at Lincoln, Ill., Oct. 9 and 10, 1888. W. A. JOHNSTON, Sec.,
430 Main St., Peoria, Ill.

OHIO STATE DENTAL SOCIETY.

The fourth annual meeting of the Ohio State Dental Society will be held in Cincinnati, Oct. 16, 17 and 18, 1888. JERE E. ROBINSON,
J. R. CALLAHAN, Sec., Hillsboro, O. Prest.

The American Dental Society of Europe extended an invitation to the members of the Southern and American Associations to meet with them in Paris August 6, 1889. The secretaries of the two societies were directed to reply to the invitation, thanking the American Dental Society of Europe for the courteous invitation. No doubt many Americans will attend.

The following officers for the ensuing year were elected by the Southern Dental Association: J. Y. Crawford, Nashville, President; John C. Story, Dallas; Texas. First Vice President; W. N. Morrison, St. Louis; Second Vice President, John S. Thompson, Atlanta, Ga., Third Vice President; D. R. Stubblefield, Nashville, Corresponding Secretary; M. C. Marshall, Little Rock, Recording Secretary; H. A. Lowrance, Athens, Ga., Treasurer.

PLAGIARISM !

To the Editor of the DENTAL REVIEW :

Dear Sir—In the August number of the REVIEW there is a four-page article on "Antiseptics in the Oral Cavity," by L. A. King, D.D.S., of Hendersonville, Ky., which, I think, is the most barefaced piece of plagiarism that ever came under my notice. With the exception of the first eleven and the last eighteen lines of the communication, it is taken almost verbatim from Gerster's "Aseptic and Antiseptic Surgery." L. A. King, D.D.S., certainly deserves credit for having read the valuable work of Gerster but he surely ought to have been sufficiently courteous to acknowledge his indebtedness to the New York author. Yours, etc.

Chicago.

T. A. SCOTT, M. D.

The new officers of the American Dental Association are Charles R. Butler, Cleveland, O., President; A. W. Harlan, Chicago, First Vice-President; Samuel A. White, Savannah, Ga., Second Vice President; F. A. Levy, Orange, N. J., Corresponding Secretary; George H. Cushing, Chicago, Recording Secretary; A. H. Fuller, St. Louis, Treasurer. Members of the Executive Committee: Edwin T. Darby, Philadelphia; George W. McElhaney, Columbus, Ga.; J. N. Crouse, Chicago, and to fill the unexpired term of A. W. Harlan, Frank Abbott, New York. The next meeting will be held at Saratoga on the first Tuesday in August of next year.

The Northern Illinois Dental Society will meet in Freeport, Wednesday and Thursday, October 10 and 11. This is to be a practical meeting, as several new things in both operative and prosthetic dentistry will be presented. Implantation will be a feature, also a new dry battery. Any dentist or dealer having instruments or appliances of special interest will please send to the undersigned, and they will be properly exhibited and returned in good order. Several dealers will have exhibits. Reduced rates on the C. M. & St. P., C. & N. W., Illinois Central, and Chicago, Madison & Northern railroads. It is hoped the dentists of Northern Illinois will make this a large and interesting meeting.

Freeport, Ill.

W. H. TAGGART,
Chairman Executive Committee.

When the joint meeting of the two largest associations in the United States was about to terminate, President Abbott made some closing remarks expressive of the enjoyable hours spent in joint session, and expressed the hope that hereafter no North, no South, East or West would be known in dental science, and that the meeting would be productive of much good to the individual membership of both societies. On taking his seat President Catching rose and gave voice to the pleasant hours spent by the two associations in joint meeting assembled, and holding out his hand, it was fervently grasped by President Abbott, which sight sent a thrill through every one present as it indicated that hereafter a closer bond of union united the two bodies. After resuming their seats a stillness pervaded the whole assembly; no one dared to break it, but finally a motion to adjourn was made and the joint meeting was a thing of the past, ever to linger in our memories as the beginning of friendships which will endure for all time.

CORRECTION.

To the Editor of the DENTAL REVIEW:

Dear Sir—In the June number of the REVIEW, page 352, "which will some day cause these descendants of Adam much serious inconvenience," should read "which some day will cause these descendants of *Achan* much serious inconvenience."

London, Eng.

Yours truly,

W. MITCHELL.

To the Editor of the DENTAL REVIEW:

Dear Sir—Through an error of the reporter at the Iowa State Dental Society the use of white enamel for closing joints in making crowns was attributed to me, when it rightfully belongs to Dr. Horatio C. Merriam, of Salem, Mass. If you will see that the mistake is corrected in the September number of the REVIEW I will be obliged. It will be found in the August number, page 472. Yours truly,

T. E. WEEKS.

THE NEW ANTISEPTIC.

The many experiments made by chemists to obtain a substance which would act as a powerful antiseptic without being volatile, and at the same time not destroyable by oxidation, have, it is believed, been successful. It is well known that in these experiments careful tests have been made of the effects on flour paste, and of meat chopped into small pieces and mixed with water, of a very large number of chemical compounds, the result showing that those having the most remarkable antiseptic properties were the compounds of fluorine, hydrofluoric acid, the acid and neutral fluorides of sodium, potassium, and ammonia, and the fluosilicates of those bases. Of these various compounds, sodium fluosilicate has proved to be the one which, for powerful antiseptic and unobjectionable properties, is the best suited for general use: it is not poisonous, possesses no smell, and is sparingly soluble in water. The experiments made with it for surgical purposes show that a saturated solution containing 0.61 per cent. of the salt is not irritating to wounds, while it possesses greater antiseptic power for animal tissues than one part of per chloride of mercury in one thousand of water, which is a stronger solution than can generally be employed in surgery without poisoning.

OBITUARY.

GEO. W. KEELY, D.D.S., OF OXFORD, OHIO.

The whole profession was shocked by the sudden and unexpected demise of the honored treasurer of the American Dental Association, just on the eve of the annual meeting of the Association in Louisville. Dr. Keely's death resulted from an accident, the particulars of which we copy from the *Oxford News*:

Last Thursday morning when our people arose from their slumbers they were pained beyond expression to learn that Dr. George W. Keely had met with an accident which would probably result fatally. The facts of the case are about as follows:

Wednesday evening Dr. Keely went to his office in the Cone building to attend to some correspondence, but before seating himself to the work he went to the rear of the third story to repair a telephone wire which connects the office with his residence. While leaning out a window endeavoring to draw the wire in with a common hoe, and holding an open pocket-knife in his hand, he lost his balance and fell to the pavement about thirty feet below. The knife by some means was plunged in the back of his head to the depth of a half inch. It is supposed that he fell about eight o'clock, and owing to the fact that the portion of the yard in which he fell is unfrequented he was not discovered until about eleven o'clock. He could not have remained unconscious for a long time, for the doctor said that when he realized where he was he heard the merchants who do business in that locality closing up for the night, but was unable to make them hear his feeble cries for help. By a great effort he managed to crawl on his hands and knees to the entrance door on Main street, and attracted the attention of the night watchman, H. L. Kyler. His face was completely covered with blood, and the watchman had not a little difficulty in recognizing him. He at once assisted the doctor home, where Dr. E. L. Hill was summoned immediately.

Dr. Keely at once informed the surgeon that in attempting to extricate the

knife blade from his head he had broken it off. Upon examination, it was found that about half an inch of the blade remained in his skull. Great difficulty was had in removing this, and finally it was necessary to chisel it out. It was broken in two pieces, the largest piece about three-eighths of an inch and the smaller one about one-eighth of an inch long. It was also learned, upon further examination, that three ribs were broken and that he was otherwise injured internally, but it was hoped at first that he would recover. He retained his consciousness throughout, and suffered no pain at all. This was regarded as a fatal symptom. Yesterday morning he was found to be in a critical condition, and at about noon all hopes of his recovery were lost. He passed quietly away at two o'clock yesterday afternoon, surrounded by his family.

Biographical sketch of the late Dr. Keely:

George Washington Keely, D.D.S., was the grandson of John Keely, a German by nativity, born in 1753. He came to this country in 1762 with his parents and settled in Pennsylvania, afterwards becoming a soldier in the Revolutionary war and being wounded at the battle of Brandywine. His son, John second, was born in Dauphin county, Pa., January 16, 1779, and died in Oxford, O., May 7, 1848. He married Miss Ann Iddings, a native of Northumberland county, Pa., who was born August 7, 1787. Mr. and Mrs. Keely came to Oxford, O., in 1818, and in 1822, on the 27th of October, George W. Keely was born. The residence of the family was but a short distance south of the university buildings, and the boy had the privileges of the schools of the town, and when but a mere lad of some fourteen entered Miami University. Three years later the president, Dr. Bishop, retired. Mr. Keely was warmly attached to the doctor, and feeling that the trustees of the institution were dealing unjustly by him, manifested his own sympathy by refusing longer to be numbered with the students of the school, although it had been his expectation to have pursued a full graduating course. Not long after this he spent a little time with Dr. J. D. White, then a practicing dentist in the city of Hamilton; but in the fall of 1839 entered the office of Dr. John Allen, then a noted dental practitioner of the city of Cincinnati (now of New York), with whom he spent the two following years. Returning to Oxford in 1841, Dr. Keely established himself in the practice of his chosen profession by opening an office in the building at the corner of High and Beech streets, where he remained for a year and a half, then moving to and occupying an office on Main street (the rooms now occupied by Clinton Douglass as a dwelling). Afterwards, in 1867, he rented the rooms corner High and Main streets, where he has continued his practice ever since. Agreeable to the customs of the day and the practice of many dentists in the early history of the profession, Dr. Keely sustained for some years a series of periodic visits to neighboring towns in the States of Ohio and Indiana, which extended over the years of his early practice.

On the 13th of March, 1851, Dr. Keely was married to Miss Susanna Wells, in the city of Cincinnati, who bore to him three children, only one of whom, a son, Charles I. Keely, D. D. S., is now living, and is a practicing dentist as partner of his father located in Hamilton, Ohio. The married life of Dr. and Mrs. Keely was of short duration, as she was taken away by death, May 25, 1856. April 21, 1861, Dr. Keely was again married, to Miss Cornelia Cone, of Oxford, who has borne him eight children, three of whom only are now living, two daughters and a son, Mrs. E. M. Fye, Nellie and John.

After having been in active practice twelve years he graduated at the Ohio

College of Dental Surgery, in March, 1853. Being of an ingenious and scholarly nature, Dr. Keely has ever been among the foremost in all movements which look toward the elevation and advancement of the interests of the profession of his choice, and has been ready to aid by his presence, councils, and means, every organized effort upon the part of his brother practitioners for the advancement of its standards. He was present at the meeting of dentists, first held at Niagara Falls, where the foundations were first laid for the organization of the American Dental Association in 1859; has been an almost constant attendant upon its annual sessions; was elected its president at Philadelphia in 1876, and presided as such at Chicago in 1877. In 1882 he was elected treasurer, which position he held at the time of his decease. He was an active mover in the organization of the Ohio State Dental Society; was once its president, and has for the last ten years been re-elected to its treasurership. He has been either an active or honorary member of the following: Mississippi Valley Dental Society, Mad River Valley Dental Society, and of the Kentucky, Indiana, Missouri, Illinois and Wisconsin State Dental Societies respectively, and was elected a member of the New York Odontological Society. He has been a trustee of Ohio College of Dental Surgery for the past twenty years, and often president of the board of trustees, and for the past fifteen years has lectured to the students on the "Cause and Management of Irregularities of the Teeth," which he has made a labor of love for the past twenty-five years.

He has been a liberal contributor to the literature and periodicals of his profession. From his reports on Dental Education, made in 1874 and 1875 before the American Dental Association, copious extracts were reproduced in the "History of Dentistry in the United States." He has often accepted invitations to lecture on some of the specialties pertaining to the practice of dentistry, one being "Causes and Prevention of Irregularities of the Teeth."

When twenty-one years of age he became a member of the Masonic Fraternity and was one of the charter members of the lodge of Odd Fellows in Oxford when it was organized, having previously been a member of the Brookville Lodge. In addition to his professional activity, Dr. Keely has taken the warmest interests in everything pertaining to the well-being of his native town. City improvements, the grading of the streets, the embellishment and adornment of the city parks and college campus; improvement of public buildings, etc. He was a sure promoter and active worker, while the several educational institutions—Miami University, of which he was a trustee; Oxford Female Institute, Oxford Female College and Western Female Seminary held a warm place in his heart, and to their advancement he contributed liberally of both mental and manual effort and pecuniary means.

The Doctor was a man peculiarly social in his nature, a skillful and intelligent practitioner, kind and indulgent in his pleasant household, and a warm and sympathizing companion and friend, having a high place in the esteem and confidence of his fellow citizens.

THE DENTAL REVIEW.

VOL. II.

CHICAGO, OCTOBER 15, 1888.

No. 10.

ORIGINAL COMMUNICATIONS.

INAUGURAL ADDRESS TO THE STUDENTS OF THE CHICAGO COLLEGE OF DENTAL SURGERY.

BY PROF. GARRETT NEWKIRK, M. D.

We have met to-night to inaugurate the seventh annual course of instruction in the Chicago College of Dental Surgery. The history of steady progress in this institution, and its present favorable condition, inspire us with hope for the future.

We, of the Faculty, are assured that never have the preparations for successful work been so complete as at present. Being encouraged ourselves by the presence of what we believe to be conditions of success, encouraged furthermore by successes already achieved, we are ready to offer words of cheer and encouragement to the class, this opening night.

Therefore, on behalf of the Faculty and the Board of Trustees and Directors, I extend to you all a hearty greeting and a cordial welcome.

We see among your number to-night most, if not all, the members of our last year's Junior Class. This gives us at once a sense of acquaintanceship and a feeling of confidence.

From the good work you have done as juniors, we know what to expect of you as seniors; and we have no reason to doubt that the bonds of mutual confidence and esteem already fixed between us, shall be increased in strength during the months to come.

To you, as to a band of friends, familiar with the rules of the college and the habits of its teachers, we look to form a nucleus of good order and example. Your unwavering moral support

will go far toward moulding the character of the class as a whole. For, though you may not have thought of it, each class has a distinctive character of its own. There are no two alike. A composite photograph of one would not be like another. And there is a certain primary stage in the history of any class, when the spirit or tone, the class individuality, is being developed.

Let each one of you, therefore, determine within himself to assist in making the class character a good one.

Much responsibility rests upon those of you who have belonged to a former class. We hope you will be readily approachable by, and friendly to, new comers, helping them to become acquainted with the plans and details of college work, and to place themselves in harmony therewith.

To those of you who are with us to-night for the first time, I would speak some words of encouragement and helpfulness. We are as yet strangers. It will take a little time for you and your teachers to become acquainted. But you are on vantage-ground in at least one respect. We are all favorably disposed toward you, hopeful of you, wishing to believe the best things about you. We shall not believe otherwise than good of any one unless he so compels us.

It ought to be a stimulus to any young man to try and *do well*, to know that his teachers are anxious to think *well of him*.

The college must take the student as he is. He comes to us as simply a bundle of facts — facts of heredity — each with his peculiar constitution and mental traits; facts of training and education; facts of personal habit; facts relating to honor, integrity and moral principle; facts, the sum total of which is expressed by the word character.

We accept the student in the hope that the facts in his case have been, on the whole, favorable. If not, the school, as well as the student, will be at a serious disadvantage in the attempt to make him a doctor.

The student who feels within himself that he possesses the essentials of a good character, whatever he may lack in culture or polish, has no reason to be discouraged. What he lacks he may with labor and patience acquire.

Mr. Lincoln, in a speech at Springfield, during the memorable debates of 1858, said: "I set out in this campaign with the

intention of conducting it strictly as a gentleman, in substance at least, if not in outside polish. The latter I shall never be, but that which constitutes the *inside of a gentleman* I hope I understand, and am not less inclined to practice than another." (Lincoln and Douglas Debates, p. 57.)

So I should say to you, if you have the essentials of character, "that which constitutes the *inside*," the "*outside polish*" is of minor consequence.

This can be acquired in time. If you are conscious of an honest purpose, and have a strong determination to do the best you can, do not be discouraged by a sense of your own awkwardness, or because there are so many things you do not know, or because others seem to possess a quicker tact and bolder assurance. Stand your ground quietly, be patient, watch and wait.

If the young man has been compelled to work for his own support or that of others, or for his education; if whatever progress he has made has been at the expense of sacrifice and self-denial, he is none the worse for that. The facts are favorable.

Poverty is with some men a necessary stimulant. They would not amount to much without it.

Lord Eldon, a distinguished lawyer of England, used to say that "the first requisite for distinction as a barrister was, to be not worth a shilling."

From my observation of medical and dental students, I conclude that the majority are not lacking in this prerequisite.

If poverty does not make a man work, nothing will; and work gives him an appetite—an appetite for knowledge as well as food if he has any spirit, because it is only by knowledge he can rise.

It was said by a politician, some years ago, that a certain party was "an organized appetite for spoils."

That is what this class ought to be — *an organized appetite for knowledge*.

In order to obtain knowledge, three things are essential: time, opportunity, and the *man himself*. The most important factor is the *man himself*.

Time we all have — twenty-four hours a day — pretty evenly distributed.

Opportunities, the man himself, if he be truly in earnest, will find, or he will make them.

Some of the most eminent men of our profession have acquired knowledge under the most unfavorable conditions, and in spite of obstacles that seemed to stand mountain high.

When the engineers sought to make a way for the steel rails on the Pacific railroad in California, "Alp on Alp" arose to bar the way. Twenty tunnels were bored to accomplish a distance of fifteen miles. The track crossed and re-crossed itself—coiled like a serpent through and around the mountain, from plain to summit and from summit to plain.

So it is with the man determined to have knowledge. The strongest barriers, mountains of difficulty, only serve to stimulate him to indefatigable exertion. He surmounts them, discovers a pass or pierces them, at any cost of time and toil.

And he *grasps opportunities*, makes the most of them, despising not the least of them. He *seeks* opportunities, *discovers* opportunities, catches them on the run, shoots them on the wing, is determined not to let them get away.

Josh Billings illustrates lost opportunities by the boy who once caught a young rabbit and let it go again, saying he would catch it when it got big. He is looking for the rabbit yet.

But if the man *himself* be lacking, all else goes for nothing. What is *time* to him? What does it signify to give the man days who will not use hours, or to give him hours who will not use moments?

What are opportunities to him who fails to appreciate them? What are *great* opportunities to the man or the boy who will not improve the least of them?

Now, to you, young men, are offered opportunities both small and great, in this college—all and more than you can possibly exhaust, for obtaining knowledge.

You have all the time there is in the next six months—one hundred and fifty days or more, of twenty-four hours each, for labor—less the necessary time for rest and sleep.

If any one fails to obtain a considerable addition to his store of knowledge in the next half year, rest assured the failure will be in *himself*.

What further I shall say, will be in the way of hints, as to the best way of improving your time and opportunities.

The first thing I shall speak of, is punctuality. I am con-

vinced that strict punctuality ought to be classed among the positive virtues. It is based on conscience. The failure to keep an engagement by mere negligence or carelessness, or indifference is a positive violation of the principles of honesty. It amounts to stealing some other man's time.

This is true in business affairs, and it amounts to about the same thing in school and college work.

By lack of punctuality on the part of one, some other person is annoyed or hindered, or loses time.

Punctuality is a *habit* — a habit based on *principle*. Want of punctuality is also a habit, based on a practical disregard of principle.

Punctuality shows a distinct regard for the rights of other people. The root of non-punctuality is *selfishness* — some kind of selfishness. It is indolence; a disposition to let one's own comfort and ease take precedence of another's right; or it is some piece of work one thinks will be more profitable to himself; or it is some amusement or diversion — self-indulgence at another's expense.

Sometimes the want of punctuality is the result of habitual miscalculation. The person lays out as much or more work than can be accomplished up to a certain time, leaving no margin for going and coming, or for unforeseen contingences. But after a man has had some fifteen hundred experiences of this sort, it would seem that he ought to learn better.

There is really no excuse, and it indicates a weakness of character.

I have heard Dr. J. Adams Allen relate this circumstance in the life of the late Dr. Gunn, the eminent surgeon.

In the early days of improvement in the State of Michigan, they were residents of the same town, and co-laborers in a young medical college.

One evening there was to be a faculty meeting at 7 o'clock. Dr. Gunn had been called in the morning, some 25 or 30 miles, to set a broken limb. He had gone across country over the worst of roads with a horse and gig. As the hour approached for the meeting one after another dropped in, and each one said, "Gunn won't be here, he can't make it." But said Dr. Allen, "*I told 'em he'd be there,*" and sure enough at the time appointed the gig

rolled up, horse and rider plastered with mud, but "Gunn was there."

I had the pleasure of listening to a course of lectures from Dr. Gunn, and I believe he never failed the class at the appointed hour but once, and then he had his place supplied. The rule was, that on the minute, the door opened and "*Gunn was there*"

When the statue of Franklin was to be unveiled in Printing House Square, New York, the hour fixed for the ceremony was 12 o'clock.

All those expected to officiate were there in advance except the clergyman. Fears were expressed that he would fail to appear. But Horace Greeley said, "You needn't be afraid, I know the man, and if he isn't dead, or some member of his family isn't dead, he'll be here."

Just on the stroke of 12 the Doctor entered, saying he had been delayed by a blockade in the street.

Very few young men seem to understand the value of punctuality. It is a quality that a business man appreciates more and more every year of his life.

Has it ever occurred to you that a *strict account of time is of unusual importance to the dentist* — more than to the physician or the lawyer, from a business stand-point? It is true. The nature of his work, the nervous tension involved, the light required, unite to limit his working day to a few hours. Hence his working time is precious. He must learn to so consider it. He must teach his patients to so consider it.

Usually it is not well to work for a patient just as he "drops in," even if you have nothing to do. Better make an appointment with him, if for no other reason than to cultivate in him and yourself, the habit of *making and keeping engagements*.

If this has not been a matter of special thought with some of you, there is no *better* time or place to begin than now and here, at the beginning of this college course.

The close application of this rule of conduct for a period of six months, will go far towards establishing it for a lifetime. And the future will prove this to have been one of your most valuable acquisitions.

I once knew a student who was so anxious to get all he

could out of a course of lectures, so fearful lest some valuable idea might escape him, that he never missed a lecture or part of a lecture except by serious illness ; and he took care to live on the same side of the river with the college, so he never was "*bridged*." And the professor was never so dull, or the matter of his lecture so dry, that he did not get something that paid him for being there.

Each lecture in the course is a link in a chain — the loss of one is a loss to the whole. The student frequently fails to comprehend what he hears to-day because of what he missed yesterday, and so he will be again placed at a disadvantage to-morrow.

In church parlance, it *pays* to "observe the ordinances," to be "*in the way* of receiving a blessing ;" to *make use* of "the means of Grace."

Now you will be pleased to observe that this exhortation to promptitude is a two-edged sword : it cuts *this* way as well as *that*.

It is an annoyance, it is a loss and an injustice to the class for the professor to be habitually tardy and uncertain ; and I believe you will have no such examples in this faculty.

On the other hand it is an annoyance and an injustice, not only to the teacher, but to the whole class, for the student to be tardy and intrusive. Whenever he comes in late he treads a whole paragraph of a lecture out of sight, or makes a dash in the middle, which might be appropriately called a dash of cold water.

As a rule, perhaps about 10 minutes should be allowed in the order of time, to provide for little unforeseen hindrances, for getting fairly seated, and for vocal exercises, such as "John Brown's Body," "Marching through Georgia," or the plaintive remonstrance of "the man who hath no peanuts."

But when the side door opens, every student whose duty it is to attend the lecture or the quiz, should be there.

Being there, it goes without saying, he should pay attention to the words of the teacher. Courtesy alone requires that he *appear to be interested* in the subject.

There is nothing more encouraging to the lecturer than to have the pupils act the part of understanding what he is talking about. It fires him with enthusiasm, and he will not discover his mistake till he comes to quiz, or examination.

TAKING NOTES ON LECTURES.

Unless you are a short hand reporter, notes should be brief, and refer only to the leading thoughts of a lecture.

Note taking is quite apt to break up one's close attention.

While he is writing down something he loses something else, possibly of more importance.

To cultivate the habit of concentration, to follow closely the line of thought developed by a speaker, is, after all, of greater value than notes. Something depends, of course, upon the subject.

When mere memorizing is involved, as of symbols or names, or proportions, as in formulæ, notes are of course indispensable ; but when scientific reasoning comes in play, they are of little value.

Notes are of principal use, I think, in relation to the quiz.

Most students think their notes will prove of great value in the future ; but as a rule the note book will have a fate somewhat similar to that of the Honorable Bill Nye, who writes " all his best thoughts therein, puts the book in a side pocket, and gives the coat to a poor man whose address he does not know."

Impressions on paper are of value only as they help to make them indelible in the brain.

TEXT BOOKS.

You will have use for only a few. They will be :

1st. The Cadaver ;

2d. The Skeleton ;

3d. Gray's Anatomy.

These should be every day books. For reference you may need a chemistry, materia medica and physiology. But if you follow your teachers closely and do the practical work of the infirmary, you will have very little time or vital energy for book reading during the course. This should have been done before or must be done later.

If it be true, as Carlisle has said, that "*a man perfects himself much more by work than by reading,*" the senior students will bear me out in the statement, I think, that the opportunities have been excellent hitherto in this institution.

I do not call to mind that a student has ever complained of not having enough to do.

The growth of this college having been somewhat phenomenal, we have been scarcely able to keep up with it in the matter of house room, and this has necessitated somewhat close and systematic regulations.

If any of these should seem to you unduly stringent, please remember that they have been adopted only after full consideration, and for the good of the class as a whole.

None of the rules will be found irksome if cheerfully acceded to. A practical application of the "golden rule" will make all others easy.

The members of the faculty believe that each department of work in this college is important in its place. We have laid what we believe to be the foundation studies in the Junior course, on which, as in a building fitly joined together, *the Senior course and a successful practice may stand*, even as the house builded by the wise man of the parable stood, "because it was founded on a rock."

Anatomy. If you try to build without this, you are placing your pile upon posts in quicksand.

Physiology. Without this you will have neither framework nor proportion—no adaptation of means to ends in your superstructure.

Chemistry. Without this you will be like the builder who is ignorant of the materials that enter into the construction of his house.

Be patient in the study of all these. Be not in haste to reach operative work at the expense of that which goes before.

Before you are anxious for the living and suffering patient, give thorough attention to the department of operative technics—the study of and operations upon teeth *out of the mouth*.

This kind of work is of very great importance, as you will realize more and more every year when you are in practice.

In conclusion, I wish to say a few words with reference to practice in the infirmary.

Patients are assigned to the student for treatment and necessary operations. It is intended to give him in this way an experience preparatory to private practice.

The patient is his patient; the practice is his practice, subject only to the inspection and assistance of the Superintendent.

Very much depends upon your method of conducting this practice, whether with few patients or with many.

I have already hinted at the matter of promptness, being punctual and requiring punctuality on the part of the patient.

Next let me say, be thorough in all you attempt to do. Let every operation, however simple, represent the best there is in you at the time.

Some one has said, "If you do not take pains, pains will take you." You can not take too much pains with anything in dentistry.

It does not signify that you have many patients or that you do very many operations. It does signify *how you do, what you do*. Suppose there should be only one patient given to a student, with but one decayed tooth, and connected with that tooth there should be an abscess. If the student should open the cavity properly; with delicate instruments cleanse the pulp chambers antiseptically and skillfully, treat the diseased conditions rightly, fill the root canals perfectly, and then the cavity of decay thoroughly with gold; whether at two sittings or ten sittings, in three hours or twelve hours,—I would think this one case more valuable as a demonstration of his ability than a hundred operations all imperfect.

Next to care and thoroughness, *manner* in the treatment of your patients. Remember that, as I have said, these are your patients, and you are conducting *your* practice. Conduct it as becometh gentlemen in their own offices.

Necessarily the patients of the Infirmary are of the poorer class, the majority, perhaps, people at service. Nevertheless, treat them with all courtesy and kindness; you can not afford to do otherwise, even as a matter of policy, from the fact that every day you are cultivating *habits of action*. You must cultivate the manner *here* you wish to carry with you into future practice.

For practice sake, therefore, treat your patients as ladies and gentlemen, whatever they may be—and many of them are such at heart, whatever they may lack, as Mr. Lincoln said, in "*outside polish*."

Most people feel it incumbent on them to treat with courtesy those they consider their own equals.

The test of the true gentleman or lady is the disposition shown to subordinates--inferiors, so called.

One word more; as to your relations with the Superintendent. We have the rare good fortune to possess one who is both competent and willing to give you all the help you need, so far as lies in the power of any one man—all that is really necessary.

Please spare him all the trouble of every sort that is unnecessary. His time and his vital energy are precious. We can ask of you nothing more than to treat him with that courtesy and consideration his well known character merits.

The course is now opened. Time is precious. Use the moments of the months, and yet remember that what you shall accomplish here may not be measured by time.

“He most lives who thinks most, feels the noblest, acts the best.”

NOTES OF A VACATION TRIP TO EUROPE.

BY THE EDITOR.

(Continued from Page 244)

To some of the readers of the DENTAL REVIEW it may not be known that there are several dental schools, or hospitals as they are generally called, in Great Britain. Two of these are located in London, the National Dental Hospital and the London Dental Hospital, the latter is the older, and is, I believe, the successor of the London School of Dentists; at any rate, it was founded in 1859, nearly thirty years ago. One thing in connection with the British schools is worthy of notice, they do not confer a degree or license to practice. They are strictly teaching institutions. The student, unless he is qualified to pass the examination of the Royal College of Surgeons, has no diploma conferred on him. When this examination has been passed, he is allowed the privilege of signing himself L. D. S. England or Edinburgh. Glasgow or Ireland. This will account for the abbreviations found after the dentist's name, as L. D. S. I., L. D. S. Eng., L. D. S. Edin., or L. D. S. Glas. I do not remember to have seen the latter abbreviation although I suppose some do use it. One of the most striking differences between our American schools and those in

Great Britain, is that the pupils are regularly apprenticed to dentists, and they must obtain their practical instruction in mechanical dentistry outside the school. This system has one advantage for the student in this, that he spends three years in a workshop, under the superintendence of the dentist and his chief workmen, so that he will thoroughly understand the theoretical teaching from the chair of mechanical dentistry when he enters the school. It has this disadvantage, however, that the instruction in mechanical dentistry from the various instructors fails to outline a consecutive system, as the work of different dentists is not the same, and their capacity as teachers must differ in proportion as they are well or illy fitted to teach. It is also a well known fact that individual private practices do not all average the same in regard to the mechanical work turned out. I can conceive it possible that a student might technically have three years of work in a laboratory, and still be an inefficient mechanical dentist, and not be much better after attending lectures on this branch, except in a theoretical way. How the authorities determine this point I do not know, when the student takes his examination. The teaching consists of illustrated lectures on this branch, in all the schools I have visited. The lecturer prepares his specimens in his own private laboratory, and exhibits them in various stages of development up to the finished piece. The management of the correction of irregularities is taught practically, by the house surgeon, and other instructors called dental surgeons, or clinicians, as we call them. The lectures on mechanical dentistry cover a period of three months in each year, the teacher giving one lecture a week. This is a much smaller number of didactic lectures than are given in any dental school in America. In all of the schools there is a lecturer on metallurgy, or metallurgy in its application to dental purposes. This lecturer only gives one lecture per week. I believe that it would be a good thing for the British schools to teach mechanical dentistry practically, instead of allowing it to be taught outside of the schools, and counting the instruction the same as might be given by practical systematic teaching by the regular demonstrator and staff of the hospital. I believe that the British method of teaching in the administration of anaesthetics is far superior to ours. There are two or four regular anæsthetists and the same number

of assistants appointed to administer the anæsthetic. Anæsthetics are administered daily from eleven to one, or thereabouts, by the appointee for the day. Two students are assigned to the extracting room, who alternate in extracting teeth, and as soon as the patient has recovered consciousness, an attendant takes charge of him, and the work goes on with the next, until all are served for the day. In this manner of giving anæsthetics a competent instructor is always present with an assistant, and the students for the time are enabled to act as operators, and gain practical instruction in this branch in the best possible manner. It is only by standing alongside of the administrator and taking part, that a student is familiarized with all the minutiae of anæsthetic giving, and treating the accidents that may occur as they appear. I was very favorably impressed by this branch of work in both the London schools, everything moved along noiselessly and with despatch. The student becomes expert in this way, and the method of teaching is far superior to our own. In America, this work is done by the demonstrator of operative dentistry as a rule, who is liable to be called away at any moment to attend to his other duties, and the students themselves are allowed to go on without a competent head, as I have seen in several instances. I would urge the adding of honorary positions of anæsthetists to all the teaching corps of our schools, so that this branch of college work could be more systematically taught. One bar to the proper performance of such work in the United States is the lack of donations in money to our schools from philanthropic persons to keep up the supply of anæsthetic agents. In a large school the first cost of nitrous oxide, ether, chloroform or other agents used as anæsthetics would be considerable if no charge were made for the use of an anæsthetic; none is made in the British schools or hospitals. A subscriber to the fund may send a person with a proper card to the hospital and have an anæsthetic administered, and the house surgeon has the option of saying when it may be given to one not having such a card or order. If our schools would appeal to the benevolent for aid in this matter, much more could be done in giving a more extended training in the administration of anæsthetics than is now done. Is is a common saying of dentists that they "do not like to give anæsthetics." This results in many cases from a poor

knowledge of how to give them, and an utter lack of the knowledge of treating an emergency, should it arise. This is not a plea for the more extended use of anæsthetics, but for better teaching in the preparation of students in this direction, so that those who care to assume the responsibilities or have a liking for this field, may so exercise it if they desire, after leaving the school.

In my next I will discourse on the teaching in other departments of the schools of Great Britain.

(TO BE CONTINUED.)

WINE OF OPIUM.

BY W. H. WHITSLAR, D. D. S., M. D., YOUNGSTOWN, OHIO.

This is one of the most useful adjuvants to a case of dental medicines. Its superiority over that of the Tincture of Opium is clearly proved by experience. Gorgas and Ingersoll both give the Wine of Opium excellent credit in their works, and it is my purpose only to emphasize the laudation the material deserves. Unhesitatingly, it should be pronounced indispensable to the dental practitioner, for his therapeutic art is enhanced by the judicious use of this remedy.

Its prime use, of course, is because of the anodyne effect that it produces. It is stimulating and astringent; it is slightly tonic.

Composed as it is of Powdered Opium, ten parts; Powdered Cinnamon, one part; Powdered Cloves, one part; and stronger White Wine (Sherry) one hundred parts, the aromatic additions make the mixture an agreeable and efficacious remedy.

The strength of Wine of Opium, since the revision of the U. S. P. 1880, has decreased, and it now has the virtues of one grain of powdered opium in 10.5 minims. According to different authorities, the dose varies from one to sixty minims, the latter dose containing nearly six times the ordinary medicinal dose of powdered opium.

Wine of Opium is anæsthetic, and with this property combined with that of the alcohol, and the astringency of the tannic acid contained in the wine, it is sometimes good to obtund sensitive dentine.

It is tonic by reason of the sulphuric acid contained in the bisulphate of potassium found in the sherry wine. Mr. Henry Long found about a grain of sulphuric acid in an ounce and a half of sherry wine, and supposed it to be free, but M. M. Bussy, according to experiment, believes the acid to be in the state of bisulphate of potassium; however that may be, there is a slight acidity from the H_2SO_4 .

Sherry wine contains from 17 to 19 per cent of alcohol by volume. Alcohol has a special affinity for nervous matter, and favors the cicatrization of open wounds by coagulating albumen. Hence we observe the favored use of the wine of opium for gums that have been lacerated by a clamp, tooth extraction, or after the removal of calcareous deposits.

Listerine is superior in some respects for these cases, but wine of opium helps very materially to lessen the pain in conjunction with it. A few drops injected into an alveolar abscess is beneficial, and that relief that supervenes is quite agreeable to the patient. In one case in particular the wine of opium became very valuable to me in the treatment of the Antrum of Highmore, indeed it was the use of this drug in this case that led to its use in others and for other purposes. You can inject sufficient to produce profound narcotism or even death; but with this preparation there is not so much danger as with the pure tincture, and it is sometimes even desirable to gain some toxic effect. It is almost unnecessary to add that the wine of opium is of undoubted value in dental periostitis, used by injecting between the gum and root of the tooth, and also by making two or three slight incisions in the gum over the affected root, then soaking a pellet or square of paper fiber lint and applying directly to the surface. Repeat as often as once per hour.

PROCEEDINGS OF SOCIETIES.

THE BRITISH DENTAL ASSOCIATION.

DUBLIN, IRELAND.

The regular annual meeting of this society—the representative body of the dentists of the United Kingdom—was held at

Dublin on Thursday, Friday and Saturday, Aug. 26th, 27th and 28th, 1888.

This association consists of eight geographical divisions or *Branches*. Each Branch has its own organization and holds stated meetings during the year. A general meeting of the Branches is held once in the year, constituting the annual meeting.

The association has an official organ, issued monthly, and is a welcome visitor to many Americans under the title of *The Journal of the British Dental Association*. In it are published the proceedings of all the meetings. It is edited with ability by Mr. A. S. Underwood and is unquestionably foremost among foreign dental periodicals.

Before attempting a description of the proceedings of the late meeting it will be profitable to draw attention to the great advantage gained in having the entire dental profession of a country united into one organization. In such a union should rest the power to obtain wise dental laws and what is more difficult, their enforcement; to create a sentiment, both in and out of the profession, which will compel increased knowledge and skill in the practitioner; to protect dentist and patient from the evils of quackery or the extortions and annoyances of unwarranted and unjust patents. It constitutes, in short, the centralized, combined force of the nation, which can be directed specially or generally to the accomplishment of any object which the best sentiment of the profession may demand.

The association met in business session first, to which only members were admitted. At the public meeting which followed, the usual address of welcome was made by a representative of old Trinity College, which had suitable response.

The reports of the officers showed a prosperous financial state and an increase in membership from 645 to 750. A hopeful growth but a lamentable few compared with list of names on the Official Register of Dentists of the kingdom.

It was resolved to hold the next annual meeting at Brighton, August 22d, 23d and 24th, 1889.

Mr. G. Cunningham, of Cambridge, read a report of a special committee appointed by the Representative Board, to carry out

the resolutions passed at the last annual meeting, with regard to the dental aspect of public health. The report stated that more attention should be paid to the teeth of recruits for the army and navy, and that some provision should be made for the purpose. Surgeon-major Crowe, of the Army Medical Staff, was of that opinion, and had stated that many a soldier had been invalided owing to ill-health arising from defective teeth. In the West Indies and India, soldiers, he said, suffered much from decayed teeth, and were practically without assistance. Medical officers of the army were not required to know anything about dentistry. The committee determined first to approach the naval authorities, and in the memorial dated 30th April, 1888, asked that dental practitioners should be allowed to examine the teeth of the recruits for the navy. The reply received from their lordships, was that they were of opinion that no benefit would accrue to the recruiting of men and boys for the naval service, from the adoption of such a proposal. The committee recommended that an expression of public opinion should be sought on the subject.

Mr. W. M. Fisher, of Dundee, read a report from another sub-committee recommending that attention to the teeth of school children should be made compulsory.

Votes of thanks to the various people and institutions who had contributed to the success and pleasure of the meeting were then passed.

The outgoing president—Mr. Brownlie—then delivered his valedictory address, in the course of which he said: To the passing year belonged something of an historic interest. It had witnessed a new departure in the development of the association. For the first time in its history it had met upon Irish soil and on the invitation of an Irish branch, to hold its annual meeting (applause). Certain it was that the welcome which their Irish brethren had prepared for them and the arrangements entered into for the furtherance of the work of the association, could not but inspire the very happiest anticipations from the formation of an Irish branch, which was so happily representative of unity, nationality and progress (applause). To have attained to representation all over the three countries was indeed a great subject for congratulation (hear, hear). The progress of the association would be most apparent in the growing length of the roll of its

members; its progress would be most real in the increasing number of its branches. Let them look to perfect their arrangements. The work to be done required attention and efficient organization. It would require some effort; but, if they worked, the issue would never be in doubt.

On the motion of Mr. Clarke, seconded by Mr. Hazleton, a warm vote of thanks was passed to Mr. Brownlie for his dignified conduct in the chair during his year of office, and for his admirable conduct of the affairs of the association.

Mr. Brownlie, having returned thanks, vacated the chair, which was taken by

Mr. Daniel Corbett, M.R.C.S., L.D.S., England, the new president, who was received with applause. He proceeded to deliver his inaugural address, in the course of which, after wishing the association a *caed mille failthe*, and referring to the museum, with which he associated the names of Mr. Booth Pearsall, Mr. Theodore Stack, and Mr. Arthur Baker, he said they saw in that museum the evidence of refined scientific investigation, skilled manual and digital dexterity, and mechanical contrivances of no ordinary merit. Let them allow their imagination to travel back sixty years, when hot water as a means of softening the wax used for taking the impression of the mouth was not known, or the tray for holding same when not ready for use, or the coloring of the model as a means of assisting the efforts to fashion a block of bone cut from the tusk of the hippopotamus, out of which an imitation of teeth was to be carved, and they would form some idea of the means of instruction at his disposal when he commenced his professional education. Well did he remember the laborious toil associated in those days with the construction of a set of artificial teeth—the time consumed and the very defective results. Six weeks was the usual time spent in the manufacture of a complete denture. He should observe that before the use of human teeth became general, it was customary to use exclusively the hippopotamus tusk. When human teeth were in fashion their supply was usually had from the graveyard (laughter); and he recollected what attention was paid the gravedigger at his periodical visits to his father's residence with his gleanings from the coffins. The visits were generally at night, and no hospitable duty in which his father might chance to be engaged was per-

mitted to interfere with the reception of the ever-welcome visitor into the *sanctum sanctorum* of the house. The president then referred to the introduction of the gold plate, the manufacture of composition teeth and its difficulties, and said in the museum they would see those beautiful specimens of mineral teeth manufactured by Messrs. Ash & Sons, which were the outcome of information given to the firm by his brother in 1837 (applause). As a representative of the old school of mechanical dentists, he was disposed to indulge in a little vanity when he recalled all they were able to do, and the style of work executed in those days, when they had no assistance, and witnessed the present state of things, when the mechanical dentist has everything done for him to make things easy (hear). In their meeting to-day they had a three-fold object to attain. They were here to thaw that rigid formality, jealousy and reserve which hitherto had kept them estranged from each other, and "froze the genial current of the soul" (hear). They were here to eradicate that noxious weed of empiricism and humbug which still grows rank and "rots itself at ease" in their very midst; and they were here to sow that seed which would vegetate, fructify, and grow into a tree, from the branches of which they would suspend the lamp of scientific knowledge and persevering research which, like unto that Promethean fire the Persians burn in the mountains, would flame night and day, never to be extinguished. It would illuminate their individual onward paths to eminence and celebrity, and direct a discerning public in their search for cultured professional service (applause).

On the motion of Dr. J. Smith (Edinburgh), seconded by Mr. F. Canton, a vote of thanks was passed to the president for his admirable address.

The president returned thanks.

Dr. R. Theodore Stack, F.R.C.S., I., read a paper on "Dental Ethics," in the course of which he said: It is advisable that any discussion which may arise on the subject may, as far as possible, be limited to the question, "Is it advisable or is it not, that an ethical code should be established?" As long as the term "dentist" signified an unknown quantity, it was impossible to lay down any general code or relation between him and the public. Previous to 1859 there was, as far as dentists were

concerned, general chaos. About that time Sir J. Tomes, whose absence to-day we so much deplore, while we feel confident he is with us in spirit, in conjunction with other pillars of the profession, succeeded in inducing the English College of Surgeons to establish a diploma. The chief principle laid down by Sir John Tomes was, that the education of the dentist required a peculiar combination of mechanical and surgical training, and that this combination was not to be found in the curriculum laid down for the general surgical diploma. The spirit of this movement culminated in the Dentists' Act of 1878. This act has done much to convert the term dentist from an unknown to a known quantity. Dentists, since the passage of this act, are bound, as far as they can and have opportunity, to assist in the training of a proper supply of dentists to meet the requirements of the public. Their attitude should now be to encourage young men to enter this profession as an honorable calling. The dentist should recognize the duty of being particularly forbearing and tender with young children, and endeavor to train up the new generation to believe that a visit to the dentist will not entail pain. He should maintain the dignity of an educated gentleman as far as possible, be regular and punctual with his engagements, and considerate of the time of his clients. He should be courteous, firm, humane, cool, steady, temperate, genial. The public, having passed the act of 1878, should, in their own interest, contribute to support dental hospitals, at least in all large centers. They should treat the dentist as an educated gentleman, recognize that he has expended a large amount of capital in his education, and that his opinion and his work should receive fair and cheerful remuneration. As regards the attitude of medical men to dentists, they should be trained as students for a large part of their curriculum on the same benches with the dentist. As a result of this, the seeds of mutual respect and appreciation would be sown. This would be a sure remedy for those despicable and unworthy feelings of jealousy, wounded dignity and contempt, which bring discredit and disgrace on those who give them expression. The question of the fees charged to medical men should be discussed. It is immoral to do gratuitous work for the medical man in the hope that he may send the dentist patients. The relations of dentist and doctor about anæsthetics

should be temperately discussed and defined. The line of demarcation between oral and dental surgery should be discussed; the relations of dentists to each other; the question of advertisements; the question of consultation between brother practitioners; the question of scale offers; the relations between the older and younger dentists. Dentists calling on brother practitioners should not be detained. It is a piece of vulgarity and stupid affectation to keep a brother dentist waiting with the object of impressing him with the number of your appointments, etc. (hear, and laughter). Where two dentists arrange consultation, punctuality is incumbent on both sides. Dentists should embrace all reasonable opportunities for meeting one another in professional meetings and gatherings. I appeal particularly to you—would you, after having tasted the pleasure of professional intercourse, resort to the old policy of self-glorification and exclusiveness? It would be utopian to expect that we should all become bosom friends, but it is not utopian to expect that those pleasant professional amenities should be the outward mark of an inward radical change in our feelings towards each other—feelings of mutual esteem and charitable regard.

A discussion followed, in which Mr. W. Booth Pearsall, Mr. F. Canton and Mr. W. Bowman M'Leod took part.

Dr. Anthony H. Corley, F.R.C.S., I., read a paper on Anæsthetics in Dental Surgery. He said he would dwell on three aspects of the subjects—first, the choice of anæsthetics; second, the methods and appliances for their use; and thirdly, the dangers, with the precautions rendered necessary. He proposed to deal with three agents only—chloroform, ether and nitrous oxide. In their use, larger experience of late years had given more comprehensive knowledge and greater confidence. The more frequent and universal employment, notwithstanding the occurrence of accidents, shows that the record of casualties has a steadily decreasing ratio. That statement should not be taken as an argument for their indiscriminate use. It was the result of increased knowledge and experience, and skill, and even with these, there is a certain margin of not-to-be-foreseen accidents surrounding them. Those dangers should not be looked upon as prohibitive, but they enforce the necessity for making, previous to their use, a thorough investigation into the general constitution

and local condition of the patients. The generally admitted fact, that the dangerous symptoms occasionally attending the employment of chloroform affect the heart, points to the necessity of knowing its state, vigilantly observing its action, and taking care that all the precautions required for maintaining its action or restoring in case of failure were attended to. He might refer to a most valuable paper by Dr. Thomas E. Little on that subject in the *Irish Hospital Gazette* of 1874, in which the dangers of anæsthesia were exhaustively treated. With ether, the dangers seemed to originate in lungs and brain, and rendered a knowledge of the condition of these organs urgently essential. As this drug gave more indication of the approach of danger, and as the record of accidents was less, he gave his preference to it in serious operations, although its administration was usually attended with more difficulties and troubles, and was much more unpleasant to the patient. He dwelt on these troubles, and gave his experience as to their management, as well as to the modes of averting accidents and of treating them if they occurred. In speaking of nitrous-oxide, or laughing gas, an agent used chiefly in dental surgery, he alluded to its comparative safety, its suitability for brief operations, and its freedom from unpleasant effects to the patient, either during or after administration. On the special subject of anæsthesia in dental surgery, he dwelt upon the local conditions, their influence upon the choice of agents and methods of administration, as well as the special dangers attending the operations in that branch. He then quoted the statistics collected by Professor Lyman, of Chicago, published in "Ashhurst's International Encyclopædia, 1884," as to the comparative safety of the three anæsthetics. Thus, chloroform is variously estimated as giving one fatal case in 3,000, in 6,000, or in 10,000 administrations; ether was stated to have one fatality in 23,000, and nitrous oxide one in 140,000. In conclusion, he dwelt upon the importance of the subject and discussion thereon to dental as well as general surgeons. A limited number of the community, comparatively speaking, ever required the procedures of general operative surgery. On the other hand, how numerous and how increasing was the class whose applications were treated by dental surgeons. How few would suffer for any length of time the excruciating pangs of the toothache, but for the dread of the

horrible though brief agony attendant on even the most skillful extraction. Having had experience of both, he would accept with gratitude the aid of anæsthesia in his own case, notwithstanding its occasional risks. To understand, foresee and diminish these was equally an object with our whole art and its various branches.

A discussion followed on the choice of anæsthetics, the dangers, the apparatus, the methods and the precautions. Dr. Corbett, Mr. A. R. F. King, Mr. Coffin, Mr. Underwood, Mr. Booth Pearsall, Mr. Neill, the president and others, took part in the discussion.

Dr. A. W. W. Baker, F.R.C.S., I., read a very interesting paper on "The Annual Museum and Its Contents." In it the contents of the museum were, to a large extent, fully described, and special attention was called to such objects as were of particular interest.

THE PRESIDENT'S GARDEN PARTY.

The President of the Association and Mrs. Corbett invited a numerous company to a garden party in the Fellows' Gardens, Trinity College, in the afternoon, but unhappily the weather proved unfavorable for the gathering. Dr. Haughton's suggestion that in the event of the weather not being propitious, the Engineering school and library should be availed of, was turned to excellent account. When it was observed that the rain was determined to come down, the buildings named were thrown open, and there was of course, in addition, the Museum, with its extensive and highly interesting collection of specimens and appliances. The visitors spent a very pleasant hour in the inspection of the contents of the different buildings.

THE BANQUET.

At 7 o'clock the annual banquet was held in the hall of the Royal University, Mr. Daniel Corbett, President of the Association, in the chair. The company included about 150 gentlemen. During the dinner, the band of the Royal Irish Constabulary played a variety of musical selections, which occasionally evoked hearty applause. The gallery was reserved for ladies, but only comparatively few were present.

When the excellent dinner was over, the president proposed

"The health of the Queen," which was warmly applauded in the real British spirit, even though on Irish soil.

The other toasts proposed and acknowledged, in a conventional manner, were "Army and Navy Reserve Forces," "Press," "British Dental Association," "The Universities and Royal College of Surgeons," "The Benevolent Fund," "Our Visitors," "The Chairman." Perhaps the topic which most roused the interest of the banqueters and which would appeal strongest to the general profession was that alluded to by Dr. Kidd in proposing the "British Dental Association." He said :

"When the Association first undertook the task of raising their body to the rank of a literary and learned profession, he took a deep interest in that proceeding (hear, hear). He confessed he regretted that they had not gone some steps further than they thought it necessary to go then. The surgeon required to be learned in medicine, and no man could be a good physician who was not versed at all events in the principles of surgery (hear, hear). He believed, in the same way, that no man was fit to be a dentist who was not a student of the science of surgery and medicine (hear, hear). When, some seven years ago, the Dentists' Act was passed, he used his humble efforts to induce his college to require that men should first be surgeons and dentists afterwards (hear, hear). He believed that if the Association had gone to that extent they would have done a still greater service to their profession even than they had been able to accomplish. The College of Surgeons in Ireland did not succeed in having that arrangement enforced, but they had done their best to have the education of the dental profession extended (hear, hear). The College now held out facilities, very great facilities, to dentists to become surgeons. In order to become a surgeon of the Irish College, a man must pass four professional examinations, and in order to become a licentiate in dental surgery of the Irish College, he must pass two of those examinations. He hoped the day was not far distant when all who pretended to practice dentistry would be skilled in surgery.

Mr. Morton Smale, of London, the Hon. Secretary of the Association, acknowledged the toast. He said the proposer had made an observation in which he did not entirely concur, namely that a man should be a surgeon first and a dentist afterwards.

He (Mr. Smale) ventured to think that the order should be rather the other way, and that a man should be first a dentist and a surgeon afterwards (laughter and applause). The dental curriculum was a rather extensive one. In the first place, there was a preliminary examination, then there was a special curriculum in the dentist's special department, afterwards the student was required to spend three years at the mechanical part of the work, two years in a general hospital and two years in a dental hospital. He considered that a very good curriculum (hear, hear). He should mention that during the two years spent by the student in general hospital he was obliged to study anatomy, medicine and surgery.

The hearty applause which greeted Mr. Smale's sentiments was convincing proof that the representative men of Great Britain and Ireland are loyal to the idea of a *Dental Profession*, as opposed to the desires of those who would make dentistry a tail-feather of medicine.

Mr. Underwood, of London, in his response for "The Press," touched upon a subject which deeply concerns English dentists at present. It is that the English quack is in the habit of importing and employing inexperienced recent graduates of American dental colleges, who do not, and in most cases *can not* qualify as practitioners under the Dentists' Act. These neophytes are advertised by placard and public print in all the large cities as skilled American dentists. By such methods American dentistry in England is rapidly growing to be synonymous with *quackery*.

Mr. Arthur S. Underwood, in responding on behalf of the dental press, said that their kind reception of his name was doubly gratifying to him, for he could not do otherwise than regard their applause as in some sense a vote of confidence in the journal, and those who endeavored to conduct it. They had heard that day that now they had invaded Ireland there remained no more worlds to conquer; this was not true from a journalistic point of view, it still remained to them as an unperformed task to conquer America, and to obtain the co-operation of American journalism, in exposing and denouncing the frauds that were being daily perpetrated in the United Kingdom under the name of American dentistry. It was an undoubted fact that

people in England used the name of American in a very false sense. In London they had a large number of people who were not Americans, and who never were in America in their lives, and who yet in the most impudent manner assumed that nationality—which was a title to every man's respect—in order that it might be a cover to all sorts of chicanery. In this way there had grown up in England a class of men who ought not to be associated with any honorable profession. Unhappily self-dubbed Americans of this class were so associated, and against that false and ridiculous imitation of what was American, the Association and its Journal wished to strike.

Men who were neither Americans nor dentists, nor even honest men at all, assumed these titles with impudence, but not always, thank goodness, with impunity. It was, however, of little use to prosecute and fine them, while the voices that could and ought most effectually to denounce them remained silent. The great world of honorable dentistry in America ought to disown these disreputable parasites, and he firmly believed that when they fully appreciated the gross nature of the offence, they would disown them. The American colleagues, whose skill had won their respect no less than their uprightness had won their affection, the able representatives of the New World, who practiced in England, ought with unmistakeable unanimity to disown and denounce this unworthy rag-tag and bobtail. The very name of American dentistry, used as it was by advertising quacks, was an insult to common sense, for though certain modes of practice might find favor in certain countries, the great principles of dental science and progress were cosmopolitan, and the highly educated practitioners of Great Britain, France, Germany, Italy, and all other civilized countries shared them all—they were common property—as independent of race as any other branch of science or art.

The time had come for a disavowal, and the inducement of their American cousins to make this disavowal was the great conquest he for one was sanguine of making. He wished his American colleagues to know that the men that trafficked in their name were often men without any qualifications, destitute of professional training of any sort, sometimes even tailors' assistants, chosen for their powers of selling anything and everything, mere

shop touts in fact, that the work which they imposed upon the public was ridiculously bad, and that their methods of obtaining payment for this bad work were worse than the work itself. Let them realize this, and he was confident the disavowal would not be long delayed. He would also have them remember that so long as the disavowal was delayed those who hesitated to utter it were, by their hesitation, aiding and abetting crime and rascality and weakening the cause of professional rectitude all over the world.

SECOND DAY.

The morning of the second day was occupied in demonstrations and clinics. This feature of the meeting was highly creditable to the management of the meeting, and the operations as a whole were quite up to the standard of those performed at an American clinic. The real utility of the exhibition was lost, however, as is usually the case in society clinics, in allowing so much space and importance to be given to the methods that are purely experimental, or are but rarely used in routine practice; as, for instance, bridgework and implantation, to the exclusion of filling operations, the artistic arrangement of artificial teeth, etc.

It was noticeable that not a single clinic was devoted to the demonstration of amalgam cement, or gutta percha—the materials so important in English dentistry; that not a clinic was given showing the treatment of diseased peridental, or intra-dental tissue.

AFTERNOON SESSION.

READING OF PAPERS.

The association assembled in the Anatomy Theatre at half-past two, when the reading of papers was resumed, the president (Dr. Corbett) in the chair.

Dr. Booth Pearsall, F.R.C.S., I., read a paper on “The Use of Imagination in the Design and Construction of Artificial Teeth,” in the course of which he said: Some of our pessimistic brethren consider that excellence in mechanical dentistry has been on the wane for some years, and the credit of this baneful state of things has been credited to the unsuitable employment of vulcanite. I venture to think, however, that in the selection of the various materials modern science has placed at our disposal, a dentist can

still show skill and inventive qualities of a high order, whether it be in gold or in vulcanite, or the now fashionable continuous gum work, which has hardly become more than a decoration to mechanical work as yet. I am at a loss to understand why mechanical skill should degenerate, as I am of opinion that a well designed, comfortable denture, fulfilling the objects of its being, does a dentist as much credit, as a practitioner, as an elaborate gold or porcelain filling, that may be lost to the patient from a simple cold, setting up periodontitis in the socket, that even the wonderful advances now seen in operative treatment may not be able successfully to subdue. From some years' observation there is, I regret to say, far too great a proportion of badly designed and inartistic work produced, that might seem unwarranted when we remember how energetically the dental schools have been carried on for the past twenty years or so; and it is with a view of rousing my younger brethren to take a more hearty and personal interest in their workrooms and mechanical processes with artistic aims, that I venture to speak to you on this subject. In constructing or designing artificial teeth, one of the safest rules the conscientious practitioner can take to heart is that embodied in the *argumentum ad hominem*. Would he like to wear it himself? And I am thoroughly convinced that many professional pitfalls are brought about by the too frequent habit of studying the plaster model rather than the patient, attention being more frequently directed to the solution of the mechanical problem on the model rather than to the page of nature. I would, therefore, earnestly urge the cultivation of a habit of endeavoring to picture or imagine in your mind the nature of the appliance you purpose to supply to your patient, with all the details so distinct and real that you could make a drawing from them, or model them if you wished, before you even placed the impression tray in the patient's mouth; and it is the use of this precious gift of imagination that enables the users of it to shine in poetry, painting, literature, and all the inventive arts and sciences. The points I would dwell upon as likely to lead to an artistic result in the construction of artificial teeth, are a careful study of the natural expression of the mouth by making experiments with suitably moulded wax try plates; the careful selection of suitable teeth, in harmony in form and color with the face

and mouth of the patient ; and the correct centering of the teeth when set up or mounted, not by rule but by direct observation, not altogether according to taste, as the cookery books say, adopting a bold style or the reverse, but rather by the careful noticing of the characteristic of each case with which you have to deal. The careful and deliberate trying in of the work during the different stages of its progress often affords most valuable hints, not only from the point of view of your own experience, but that of your patient ; and I confess to enjoying the criticisms at this part of my work, of an intelligent patient, while correcting the deficiencies of the model or preserving its excellencies. Last, but not least, is the pains-taking adjustment of the denture in the patient's mouth after it has been continuously worn for twenty-four hours, carefully noting the friction spots on the mucous membrane as well as on the plate, and studiously paring or dressing away those on the teeth with a scholarly perception of their relative importance, as well as by careful fine fitting of the articulation after the patient has had at least forty-eight hours' experience of the use of your appliance.

A discussion followed, in which the president, Mr. J. Browne-Mason, Mr. Balkwill, Mr. Turner, Mr. Murray and Mr. Kirby took part.

Mr. G. M. P. Murray, L.R.C.S., I., read a paper on the work-room section of the museum, and its contents. The communication was of a very interesting character.

Mr. Roff King having spoken on the subject,

Mr. Amos Kirby, L.D.S., read a paper on some properties of amalgams, which provoked an interesting discussion, in which the president, Mr. Dennent, Mr. Lloyd Matthews and Mr. Klutz took part.

The president congratulated Mr. Kirby on his persevering and exhaustive investigation of the properties of amalgams. He believed that Mr. Kirby would at a future period be able to give them an amalgam possessed of all the qualities that were desirable (hear, hear).

Mr. Lloyd Matthews said that up to last year he had had absolutely no confidence in amalgam, but, having adopted Mr. Kirby's method, he had found the result to be most satisfactory.

Mr. A. J. Watts, L.D.S., I., contributed a paper on some workroom appliances, which was followed by a discussion, in which the president, Dr. Booth Pearsall, Mr. Turner and Mr. Rogers (Wexford) took part.

The president mentioned that a message had just been received from Mr. George, president of the American Dental Society of Europe, inviting the attendance of the members of the British Dental Association at the annual meeting of the society in Paris, on the 22d of August, next year (hear, hear).

Mr. George Cunningham, B. A., Cantab, read some notes on implantation of teeth. He complained of the way in which his experiments were restricted by the Vivisection Act, the anomaly of which was that, while it allowed him to operate on the human body, it would not allow him to do so on a dog (hear, hear). He had reason to believe, however, that experiments would soon be carried out in this matter at Cambridge.

This ended the scientific business of the meeting.

A large number of the members and their friends were subsequently entertained at an afternoon tea in the Leinster Hall, Molesworth street, where an art exhibition is being held by the Dublin Art Club and the members of the British Dental Association.

THE CONVERSAZIONE.

At night the Reception Committee entertained the members of the Association and a large number of friends at a conversazione in the Royal College of Surgeons. About nine hundred of the invitations issued by the committee were accepted. The guests assembled shortly before nine o'clock in the hall of the college. They included many members of the learned professions, the leading merchants and traders of the city, and many ladies. Beyond question the assembly was one of the most fashionable and brilliant that have been held in Dublin for some time. With a view to enhancing the pleasures of the night, the College Museum was opened for the occasion, and those amongst the company who naturally inclined to scientific study, had an opportunity of spending an hour there. The gallery was reserved for promenading.

Saturday was occupied in a visit to the largest brewery in the world—Guinness'—and in an excursion to the Hill of Howth.

An account of the meeting would be incomplete without some reference to the First Annual Museum. The only way to get an adequate idea of this splendid exhibit will be through the catalogue, which may be obtained from the secretary. The collection is divided into four sections, viz.: Manufactures, Literature, Surgery, and the Workroom. Some idea of the scientific value and extent of the collection may be had when it is known that there were 1,150 specimens of pathological and anomalous human teeth carefully classified, catalogued and arranged in Wolrab gold bottles.

The museum was a loan collection, but it is probable that it will ultimately be made a permanent institution.

AMERICAN AND SOUTHERN DENTAL ASSOCIATIONS.

JOINT MEETING HELD AT LOUISVILLE, KY., AUGUST 28, 29, 30 AND 31.

[Continued from page 546.]

WEDNESDAY, AUGUST 29.—EVENING SESSION.

DR. FRANK ABBOTT, of New York, read the report of the joint sections on Histology and Microscopy, calling special attention to the "Contributions to the History of Development of the Teeth," by Drs. Heitzmann and Bödecker, as published in the *Independent Practitioner*; to the paper of Dr. R. R. Andrews on the "Origin of the Dental Fibril," read before the section on Dental and Oral Surgery of the Ninth International Congress, and to the series of articles on "The Periosteum and Peridental Membranes," which were published in *THE DENTAL REVIEW* and afterward in book form.

DR. I. P. WILSON, of Burlington, Iowa, then read a paper on the

APICAL PORTION OF THE CEMENTUM, PHYSIOLOGICALLY AND PATHOLOGICALLY CONSIDERED.

The periosteum at the apical portion of the root communicates with the lining membrane of the pulp chamber, and is thicker at this point than on other parts of the root. The connection between the pericementum and the lining membrane of the pulp-canal is very intimate, and hence in the devitalization of pulps the destructive influences may extend beyond the apex of the

root-canal and thus are communicated to the pericementum, resulting in a partial destruction of this delicate membrane. The essayist has often observed this condition, and it may be generally understood to exist to a greater or lesser extent when the tooth is tender and painful on pressure. It is his belief that whenever more than one application of arsenious acid is made, the inflammatory and destructive processes are communicated to the pericementum, and hence does not approve of any other than a single application of the destructive agent.

DR. W. H. ATKINSON, of New York, has found so much injury caused by arsenious acid that he almost believes that it ought to be entirely discarded. We do not understand the action of arsenic when applied to a tooth-pulp. A tender tooth is affected with periostitis, and this generally indicates a dead pulp. Pressure relieves the pain, and hence pressure should be continued until it becomes painful, then cut with a bistoury through the gum, two-thirds down, beginning about the apex of the root. Use what comforts you can, hot or cold, but no poultice.

DR. FRANK ABBOTT then read a paper on "Odontoblasts in their Relation to Developing Dentine," which was discussed by Dr. W. Xavier Sudduth, of Philadelphia, and the essayist.

THURSDAY, AUGUST 30.—MORNING SESSION.

The report of the joint sections on *Materia Medica* and Therapeutics was then presented by DR. JOHN C. STORY, of Dallas, Texas. He cited cases of cocaine poisoning, when that drug was employed as a local anæsthetic for the extraction of teeth, and cautioned dentists to be careful when using this drug, with whose action, under certain conditions, we are not quite familiar.

DR. A. W. HARLAN, of Chicago, then read a paper by Dr. Arthur C. Hugenschmidt, of Paris, France, on the "Hypodermic Use of Muriate of Cocaine in Oral and Dental Surgery," recording the results of 200 cases under observation. The results were so uniform that after having used the injection in 150 cases the keeping of further records was dispensed with. He uses it the same way as Dr. Thos. W. Evans, of Paris, and as it has been used by the latter in the case of the late Emperor of Germany. This is a mixture of antipyrine and cocaine. Using 7 minims of a 5% solution of muriate of cocaine and 5 minims of a solution of

15 grains of antipyrine dissolved in 15 minims of water. The slight local pain which follows disappears in a short time. The injection is made on the labial and lingual side of the tooth. To wait five minutes for the action is all that is necessary. If antiseptic precautions are not observed, sloughing and sometimes even necrosis may follow. A half grain of cocaine generally causes no unfavorable systemic action, the patient should be in a mentally quiet and easy condition; if the patient is frightened it is better to put off the operation; if used in these cases it is difficult to have the patient retain consciousness. In some cases the effect of cocaine is an interrupted respiration and an increase in the number of pulsations, accompanied by a sensation of cold. Continual engagement of the patient in conversation will prevent drowsiness and unconsciousness. He cited a number of cases of unusual results in persons who have been placed in a peculiar state of mind; he injected water and found that the patient fainted and claimed to feel drowsy and to have a peculiar, strange feeling in the head. Anæmic persons are unfavorable subjects. Care should be exercised when cardiac or pulmonary affections are present.

DR. L. G. NOEL, of Nashville, Tenn., read a paper on "Dental Materia Medica." He gave a list of anæsthetics and obtundents used by dentists. Also referred to the uses of veratrina, aconite, menthol and cocaine and their various indications. Believes that Herbst's preparation of cocaine is very useful. For pulp-capping white oxide of zinc and creosote was recommended. For the destruction of the pulp he recommended that arsenious acid be combined with cocaine or morphia and menthol, to lessen the pain which is usually caused by its application. For the cleansing of root-canals bichloride of mercury (1 to 1½ grains to ounce of water) was recommended. When iodoform is used the odor should be disguised.

DR. A. W. HARLAN, of Chicago, then read a paper entitled, "Notes on Oil of Cassia and Guaiacol," saying that they ranked high as disinfectants.

DR. F. PEABODY, of Louisville, Ky., referred to the antiseptic properties of lead when used as a root-filling.

DR. J. J. R. PATRICK, of Belleville, Ill., recommended the use of 5 grains of bichloride of mercury to one ounce of water,

It is difficult to ascertain the exact number of successes and failures, in the foregoing table. Some have reported only a few cases, all of which proved successful, while others, with a larger number of cases, had correspondingly more failures. Dr. Herring reported one tooth which had been extracted for seventeen years, but which became firmly attached and is successful. As to the assumption of the color of the adjoining teeth, by the implanted new member, he believed that the dry teeth, which (when not artificially stained) are always of a lighter color than moist teeth, become darker when in the mouth and when they are saturated with moisture. He called attention to the cases of implanted teeth examined by Drs. Heitzmann and Bödecker, and the one reported by Dr. Curtis of Syracuse, N. Y. The attachment, as far as known, seems to be bony ankylosis, forming a direct union with the alveolus, without any intervening membrane. The implanted teeth, when in good condition, are firmly, inelastically attached, and are immovable. No cases of infection, so far as known, have occurred, and the treatment recommended for teeth about to be implanted, so far as known, is sufficient to destroy any and all germs and spores. In some cases of success, the delight of the patient is such that some would prefer to submit to the operation once a year rather than wear an artificial substitute.

DR. J. D. PATTERSON, of Kansas City, Mo., then read a paper on

THE CATARRHAL NATURE OF PYORRHOEA ALVEOLARIS.

His observations, extending over a number of years, are convincing that the majority of persons affected with the disease are subject to catarrhal affections of the nasal passages, or of other mucous surfaces. He has found that the course of both diseases exhibit the same peculiarities. The effusions arising from them are similar, being first serous and afterward containing pus. The infectious characters are alike, and tendency to destroy underlying tissues are also alike. It may be the result of contagion from the nasal or pharyngeal passages. "Mouth-breathing," also, if continued for any length of time, as it is necessary in cases of chronic catarrh, will result in the infection of the mucous tissues of the oral cavity, and the disease could, indeed, be properly named "oral catarrh."

In the treatment to be pursued, the careful removal of all deposits is absolutely essential; the root affected must be thoroughly cleansed, as any particles of deposit which are not removed will result in a failure to cure the disease. The pockets are then cleaned out with peroxide of hydrogen and a solution of bichloride of mercury, which latter may also be employed in rinsing the mouth. When the teeth are very loose, a metal plate should be constructed to hold them firmly in one position.

DR. LOUIS OTTOFY, of Chicago, then read a paper on

THE INCIPIENCY OF DENTAL CARIES.

The offices of dentists are not the proper places to observe and form opinions as to the prevalence of caries, neither are the poor-houses, hospitals, infirmaries, etc., the proper places from whence to secure reliable statistical information as to caries and other diseases or conditions of the mouth. Inquiries should be conducted everywhere. Not only should we understand the relative percentage of decay, but its prevalence at each age, and what, if any, influences bear upon increasing or decreasing it. The attention of the profession is called to the work which should be done, and to enlist the services of others. The number of children reported on was 623, consisting of nearly half and half of males and females, and ranging in age from five to fifteen years. Only forty-eight had perfectly sound sets of teeth, indicating that the teeth of only something over $7\frac{1}{2}$ per cent. is sound before the age of fifteen. Of the males about 10 per cent., and of the females slightly over 5 per cent. had perfectly sound sets of teeth.

Tables were presented showing that of 14,644 teeth, over 34 per cent. were carious and less than 66 per cent. sound. Of 1,944 carious permanent teeth, only 53 had been attended to by filling or otherwise and about one per cent. of the carious permanent teeth had been extracted. The number of teeth equally divided would give each child 17.37 sound and 6.22 carious teeth.

The mixed saliva in each instance was tested. The average of the chemical reaction between the ages of five and fifteen years was 72.36 per cent. neutral, 25.94 per cent. acid and 2 per cent. alkaline. The average density of the enamel, as shown by actual examination, during the ages from five to fifteen years is 44.85 per cent. hard, 45.64 per cent. medium and 9.46 per cent. soft. The presence of salivary calculus amounted to 9.64 per

cent. The greatest number of cases were found between the eleventh and thirteenth year, and in almost all of the cases where calculus was present the saliva was in an acid condition.

The average of diseases of the soft tissues was 4.9 per cent., and found to be most prevalent at the age of eleven, at which time 14 per cent. of the children were affected.

The irregularity of the teeth was most marked at the eighth year of age, at which time of life 43 per cent. of the cases were found to be irregular. The average irregularity amounted to 24.13 per cent.

Caries is more prevalent among girls than among boys, amounting in the former to $37\frac{1}{2}$ per cent. at five years, being never less than 24 per cent. and sometimes as high as 50 per cent. While in boys the maximum at any one age was 34 per cent. and the minimum 16 per cent. At all ages, on an average, caries was by 5 per cent. more prevalent among females than males. The proportionate ratio was about the same during the eleven years of life covered by the statistics. The total average at all ages among the children was $27\frac{1}{3}$ per cent. in males, $32\frac{2}{3}$ per cent. in females and 30 per cent. in both. At least 30 out of every 100 teeth are carious before the age of fifteen years is attained, and something over 20 per cent. of those of the permanent ones which are erupted at these ages, were already affected. Children average twenty teeth each, about two-thirds or fourteen in number are permanent and five of the fourteen had been attacked by caries.

THURSDAY, AUGUST 30.—EVENING SESSION.

In discussing the paper of Dr. J. D. Patterson on Pyorrhœa Alveolaris

DR. JOHN C. STORY, of Dallas, Texas, said that he was surprised at Dr. Rawl's statement made at a previous session, stating that mercury was the cause of the disease. He believed it to be a constitutional disease, transmitted from generation to generation, and we never know how much of a tendency may exist in any of us at any time. Some cases are apparently cured only to return in five or six months in a bad condition. Uses aromatic sulphuric acid in full strength, filling the pockets with it. The following is a good preparation when pressed between the interstices of the teeth :

R

Cret. prepar. $\frac{3}{4}$ iiLac. sulph. $\frac{3}{4}$ iSod. borate. $\frac{3}{4}$ ss.

M.

In some of the cases coming under our observation all the teeth are affected, while in others only some of the teeth, and the disease progresses.

DR. WM. H. ATKINSON cited some severe cases in which cures were effected. In one particular case the teeth were very loose. They were tied in the position which they were expected to occupy, ground to properly antagonize the opposing teeth, and nothing else was done at this sitting than the dropping of some aromatic sulphuric acid into the pockets. At the next sitting the deposits were removed, and this is done by pushing instead of pulling them off. At the next sitting the surfaces where healing is not progressing as rapidly as in other portions, they are touched with the aromatic sulphuric acid. At a future sitting, pieces of paper are cut to fit about the teeth, on these a paste of tannin and glycerine is spread, and these are laid around the teeth. If this kind of treatment does not prove successful, use a mixture of caustic potash ($1\frac{1}{2}$ parts) and carbolic acid (2 parts).

DR. J. TAFT, of Cincinnati, O., called attention to the fact that we should always be careful in our diagnosis of the case. The causes are generally local irritants. Foreign substances are almost continually present in the mouth. The movement of the teeth when loose, pressure upon them and their overtaxation in use, is irritating. The gums become diseased, but to what extent germs or organisms are influential is, as yet, uncertain. The cure consists in the removal of the irritants. Use aromatic sulphuric acid, or (as Dr. Atkinson sometimes does) 1 part of concentrated sulphuric acid to 7 parts of water. Change your course of treatment when found necessary, do not over-treat, use applications seldom, but with effect. Sulphuric acid, or the mixture of potash and carbolic acid, to which reference was made, should be used only once, very seldom oftener. Thoroughness is essential. Perfect cures can be accomplished, if the work is properly done.

DR. T. W. BROPHY, of Chicago, then presented the report of the joint sections on "Anatomy, Pathology and Surgery." The

report referred to the experiments conducted by various observers in connection with the transplantation of the various tissues of the body of one animal to that of another. The mucous membrane of various animals has been transplanted, and even attempts have been made to transplant the cornea from the rabbit to the human being. He looks favorably on the future of implantation, and believes that when performed under antiseptic precautions and under otherwise favorable conditions, the operation yields entirely satisfactory results. He believes that union is by ankylosis, and failures are generally caused by absorption of the root. Whether implantation will become a standard and recognized operation remains to be seen.

DR. JOHN S. MARSHALL, of Chicago, cited a case of bone-grafting and the reproduction of part of the lower maxilla. The patient, a lady, forty-five years of age, was operated upon nine years previously for the removal of an osteo-sarcoma, which required the removal of a considerable part of the bone. The ends were brought in apposition by means of wire. Eventually reflex neuralgia of the face, neck, shoulder and arm was the result. There was pain whenever the arm, hand or fingers were moved. The diagnosis was, that the malposition of the bone exerted pressure, causing pain. He concluded that if the jaw could be brought into its normal position, the pain would cease. This result was obtained by means of an appliance. Sponge-graft was used without success. Twelve pieces of bone were grafted, all of them "taking," and a space one inch in width was filled with new bone. Large pieces, when grafted, fail; small pieces are more generally successful. He then read the report of a case from hospital practice, of fatal results following an alveolar abscess. A male patient had an alveolar abscess; the face became swollen; tooth causing the trouble, was extracted; necrosis of the bone on both sides of the face resulted; a number of pieces were removed. After considerable change in the condition of the patient, he finally died. Special attention was called to the lessons which may be drawn from this class of cases, of which but few occur, yet in sufficient numbers to prove that lesions, with which the dentist frequently comes in contact, sometimes will have fatal terminations.

DR. ATKINSON called attention to care in the extraction of

teeth. When soft necrosis has taken place about a tooth, it should not be extracted.

DR. J. Y. CRAWFORD, of Nashville, Tenn., was of the opinion that the surgeon was justified in extracting the tooth at the time he did so. The removal of the exciting cause at that time justified the expectation of relief.

DR. J. D. PATTERSON thought that the severing of the facial artery during one of the operations in the case cited by Dr. Marshall was the cause of death.

The subject of Implantation was now called up for discussion, and

DR. W. XAVIER SUDDUTH, of Philadelphia, thanked Dr. Smith for bringing the matter before the associations. He then described the difference between replantation, transplantation and implantation. He believed that when the operation is performed scientifically, that it promises much in the future.

DR. WM. H. MORGAN, of Nashville, Tenn., held that the operation and its results will not be held in so high esteem in the years to come. We will see trouble from it. The tooth is merely encysted.

(TO BE CONTINUED.)

MINNESOTA STATE DENTAL ASSOCIATION.

The fifth annual meeting of the Minnesota State Dental Association was held at the State Capitol, St. Paul, July 11th, 12th and 13th. As an unusual amount of business matter had to be considered and acted upon by the society, the usual programme on such occasions was necessarily curtailed to quite an extent.

The address of welcome was delivered by Mr. M. D. Munn, of St. Paul. The first essay presented was by Dr. E. C. French, of Eau Claire, Wis., on the subject of "Hygienic and Sanitary Dentistry." This paper will be found on page 508 of the REVIEW.

DR. D. W. EDWARDS, of Le Seuer, Minnesota, gave an essay on dental education, urging the necessity for a more complete and extended effort, to better inform the public of the value and necessity of care and attention to the teeth, quoting many illustrations of the present great ignorance of the majority of the

masses in matters pertaining to this subject. It is the duty of the dentist to instruct his patients as far as possible, so that they can act more intelligently in assisting the professional man in his efforts to preserve the useful and natural organs. The work can be further facilitated by the distribution of properly prepared popular literature on the subject and occasional articles in family magazines or journals. Some form of action by which Dental Societies should facilitate the advancement of this thought, was urged.

With the profession itself, the advantage of society work is recognized as well as the necessity for individual study and research.

Regarding our Dental Colleges, the desirability of a higher standard was expressed, and the adoption of the three years' course favored, and the wish expressed that in future years, the title of Doctor of Dental Surgery should mean much more than it has in too many cases in the past.

DR. C. W. MERRY, of Stillwater, Minnesota, presented an essay on "Immediate Root Filling," claiming that more harm had been done by over treatment of root canals than otherwise; that it was better to thoroughly cleanse and stop the opening at once, and to treat any further pathological conditions through the gum, that by this method a cure was effected much easier and quicker than by the old form of long continued medication.

DR. EDGAR PALMER, of La Crosse, Wis., furnished an essay entitled "Besetting Sins."

DR. L. D. LEONARD, of Minneapolis, read an interesting essay on the function of nutrition relative to the teeth. He claimed that deranged function has more influence in causing caries, and other diseases of the dental organs, than all other influences.

DR. C. H. STEARNS, of Zumbrota, Minn., presented an essay on the rational treatment of root canals. He urges the same treatment for root canals as is now employed in surgical treatment of other pathological conditions.

DR. W. B. AMES, of Chicago, gave an interesting clinic, showing the uses of copper, platinum and palladium amalgams, and the disinfection of root canals, by electrolytic decomposition of their contents.

DR. A. R. BEGUN, of Cedar Falls, Iowa, gave an interesting talk on implantation of teeth, but was unable to demonstrate it as the expected patient disappeared at the last moment.

DR. W. J. BRADY, of Iowa, exhibited Dr. Carroll's apparatus for cast aluminum, and demonstrated its methods of use.

The clinic exciting the most interest was that by DR. D. F. MCGRAW, of Mankato, illustrating his new method of obtunding sensitive dentine, and controlling peridental inflammation, which consists in the decomposition by electrolysis of medicinal agents, applied directly to the part under treatment. He demonstrated that an obtundent is rendered much more efficient in this way than in any other, by excavating a painful labial cavity perfectly, without pain to the patient. Dr. McGraw gave his formulæ to the profession through this Society, and they are published in this number.

DR. T. E. WEEKS, of Minneapolis, showed some new methods in crown work.

DR. L. C. DAVENPORT, of Moorhead, Minn., gave a clinic with Steurer's gold.

The meeting was well attended, and a lively interest manifested in all that took place.

The officers elected for the ensuing year were Dr. T. E. Weeks, of Minneapolis, President; Dr. C. H. Goodrich, St. Paul, Vice-President; Dr. D. F. McGraw, Mankato, Recording Secretary; Dr. L. D. Leonard, Minneapolis, Corresponding Secretary; Dr. H. M. Reid, Minneapolis, Treasurer.

The next annual meeting will be held at Duluth, Minnesota, commencing the second Wednesday in July, 1889.

WISCONSIN STATE DENTAL SOCIETY.

The eighteenth annual meeting of the Wisconsin State Dental Society was held at Milwaukee, Wis., July 17, 18 and 19, 1888. The meeting was called to order by the president, Dr. W. F. Lewis. During the session about fifty dentists were in attendance. The annual address was delivered by the president, DR. W. F. LEWIS, in which he urged the importance of men who pursue a common calling, as the dentists, coming together year after year and enlarging their views by an interchange of ideas

of the methods of their profession. "They should get out of the ruts, the bogs and the shadows which are the inevitable result of isolation. Their appreciation of humanity will be deepened, their sympathies enlarged, their knowledge increased, so that when they again take up their life work, it is with a new inspiration. They are not content to follow the beaten track of the past, but by persistent application of the mind and hand are enabled to evolve new theories and to make a more perfect application of scientific principles, to the many and varied operations and mechanical necessities that confront them at every turn in daily practice. Thus the practical result of this and every other meeting ought to be the utilization of truths and theories and methods and principles with which we come in contact; at the same time contributing to every phase of advanced thought and professional development." * * *

DR. W. H. CARSON, of Mineral Point, then read a paper on

ROOT FILLING,

Of which the following is a brief abstract: * * * The speaker advocated immediate root filling, having successfully practiced it for twelve years, believes that nine-tenths of the cases usually treated from three to fifteen days could be filled at one sitting. No matter whether there is a fistulous or blind abscess, if the peridental membrane is intact and the cause is removed, the abscess will get well. The presence of septic matter is the cause; remove it and fill the root with an indestructible substance and the case will get well. Does not believe in drilling root canals, but recommends that they should be left as nature made them. Exposed pulps, when capped, do not retain vitality but die in one, two or three years. In destroying a pulp, leave the arsenious acid from twelve to forty-eight hours, remove it, wash the cavity, let it rest ten days. Remove dead tissue, cleanse with peroxide of hydrogen and cotton hairs, alcohol and cotton, finally dry with hot air. Fill with chloro-percha and gutta-percha cones. Principal causes of failure: lack of thoroughness in cleansing canals and filling the roots. * * *

DR. T. B. FLETCHER, of Portage, then read a paper on

THE MATRIX.

of which the following is an abstract:

The essayist described many of the matrices now in use, point-

ing out the features why they are not as satisfactory as is desirable. Nearly all matrices are strong, durable and easily applied, but they are not self adjustable, and do not hug the tooth tightly without the aid of wedges. A matrix which supplies this want is constructed of two or more thin strips of metal so united by pivotal rivets as to form one continuous band; one of these pivots is a loose rivet, the other a threaded sleeve, through which the set screw works for fastening the device on the tooth. These pivots are placed below the centers of the bands, thus bringing the long arm of the lever at the top, consequently giving greater pressure at the lower edges when in place on the tooth. When the matrix is applied to the tooth (the crown being larger than the neck) forces apart and away from each other the upper edges of the bands, at the same time causing the lower edges to impinge on and tightly hug the neck of the tooth. The set-screw is used to tighten and hold the matrix in place. The bands are made of soft, cold rolled steel, and are the 1-200 of an inch in thickness.

DR. W. L. CONKEY, of Appleton, read a paper on

THE DECIDUOUS TEETH—THEIR CARE AND TREATMENT,

Of which the following is a brief resumé: Nearly all temporary teeth can be saved temporarily. To apply the dam is seldom feasible, and to keep the cavity dry for any length of time almost impossible. Use bibulous paper or other absorbents, sharp instruments, carefully avoid causing pain. Work slowly and carefully. Detain excitable children only for a short time. Never show impatience, *never* practice deception. Shallow crown cavities fill with amalgam; in deep cavities leave some decay, sterilize, and fill entirely with cement, or cement below, and finish with amalgam. Treat buccal cavities the same way. In labial and approximal cavities of the anterior teeth use cement. Small approximal cavities of molars fill with amalgam usually; large ones use cement or gutta-percha. Exposed pulps, abscesses and other diseased conditions require the same treatment as permanent teeth under similar circumstances.

DR. C. E. WILLOUGHBY, of Clintonville, read a paper, of which the following is an abstract:

NECROSIS OF THE SUPERIOR MAXILLARY BONES—REPORT OF A CASE IN PRACTICE.

The essayist reviewed the subject of necrosis, stating the causes leading thereto, giving the diagnosis, prognosis and treat-

ment of necrosis, with special reference to the disease when affecting the maxillary bones. In the case (patient a male) related, the first upper molar was extracted (not by the essayist); two weeks after pus was found flowing from the socket and from a fistula over the first bicuspid and lateral incisor of the same side. The teeth, with the buccal and labial plate of the alveolar process, were completely separated from all attachments except the gums. Incision was made extending from the first molar to the central incisor, another on the palatine surface. The exfoliated portion of bone carrying the two bicuspids and lateral incisor was removed. Other portions of disintegrated bone were also removed and the sound portions dressed smooth. The central was also removed. Carbolic acid solution was used as a dressing and the cavity filled with carbolized lint. A perfect cure was effected.

In course of the discussion Dr. T. W. Brophy, of Chicago, advised that attempts should be made to retain the teeth if it is at all possible to do so, and this can generally be done if the gum has not all been separated from the teeth. A splint sometimes has to be used. In removing exfoliated bone, cut it to pieces if necessary, so as not to bring the teeth away with it.

DR. G. V. BLACK, Chicago: If the entire periosteum has not been destroyed the teeth can usually be retained. In some cases, seen sometime after healing, cutting into the parts, I have found much of the periosteum reproduced.

DR. EDGAR PALMER, of La Crosse, read an interesting paper, of which but short extracts can be reproduced in this report. The title of the paper was :

PROFESSIONAL FOOLS AND THEIR FOLLIES.

* * * The responsibility of permitting the public to remain in such ignorance that it is possible for the unscrupulous, scheming element to humbug and maltreat it, is upon those who justly occupy a place in the front rank of educated practitioners. We proudly comment upon the rapid strides already made by our profession, and the recognition we have received at the hands of the medical fraternity, and say we ought to ignore and should avoid any consideration of the career of those who are a disgrace to us and a positive injury to society.

To ignore the follies of the ignorant, unscrupulous element in our profession, is to blind our eyes to a light which shines with a

glitter and reflection which draws a credulous people with a greater power than all the heavenly orbs of education and refinement. * * * Even armed with a just cause, we have not the strength of unity and harmony. There is mutiny and desertions and disorder all along the line; antagonisms in local affairs, jealousies, strife and friction extending with every degree of force and character through societies, associations and international gatherings, weakening and demoralizing us to an extent which not only unfits us for aggressive action, but, in the opinion of the public, makes us appear as selfish and unrefined as those we condemn.

Fools and their follies are to be found in all ranks of educated men, and the salvation of such ignorant or malicious sinners can only be secured through a perception of the fundamental principle, that all knowledge is part of the same development and is indissolubly connected. As silently and irresistibly as the snow-storms gather and mould their drifts upon the mountain-side, may the better element of our profession, strong in purpose, united in method and steadfast in action, mould the drift, thought and feeling until, in the glowing light of truth and justice, education and progress, each crystal shall help to increase the brilliancy of our highest endeavor, brightest hopes and grandest achievements.

DR. E. C. FRENCH, of Eau Claire, read a paper on

HYGIENIC AND SANITARY DENTISTRY,

which will be found on page 508 of the REVIEW. The discussion of this paper was opened by

DR. LOUIS OTTOFY, of Chicago, who said he did not believe that the teeth of foreigners are any better than those of the American-born, and claimed that no reliable data on this point exists; recommended the publication by societies of pamphlets looking to the education of the public, and recommended the adoption of measures whereby the absolutely needy may receive gratuitous dental services. For a disinfectant in the office, he recommended the use of bichloride of mercury (1:1000), into which the hands and instruments should be dipped.

DR. J. G. REID, of Chicago, did not believe that the use of bichloride of mercury, in the strength recommended, and during

the length of time the hands and instruments would be exposed to it, would destroy all germs.

DR. G. V. BLACK, of Chicago, stated that the study of micrology is as yet in its infancy, and but little is known with absolute certainty, but that the way was rapidly opened, and it is hoped may eventually lead to the systematic treatment of caries. Broaches can be exposed to heat, to destroy germs.

DR. E. C. FRENCH, of Eau Claire, believed that heat was one of the most certain of germ-destroyers.

DR. EDGAR PALMER, of LaCrosse, referring to the education of the people, stated that the printing of separate, short pamphlets or leaves, on separate dental subjects, a good method.

DR. C. P. SOUTHWELL, of Milwaukee, discouraged the method of sending away patients because they do not follow his directions as to cleanliness, but, instead, he labors with them and endeavors to teach them to do better, from time to time.

DR. C. C. SOUTHWELL, of Milwaukee, read a paper entitled

A CRITICISM OF BRIDGE-WORK ATTACHED BY BANDS.

The following were the principal conclusions of the paper: The subject of oxyphosphate, its durability and lessened efficacy when employed for bridge-work, was carefully and fairly reviewed, and the conclusions drawn therefrom that, while fillings of oxyphosphate of zinc cements, when introduced under the most favorable conditions, do not last more than two years as a general rule, the cements, when used for bridge-work, can not be mixed as stiff, but must be used thin, and that the exclusion of moisture is more difficult, and that hence the cement under bands does not promise as much success as when introduced into cavities.

The essayist, in illustrating a typical case on the blackboard, deprecated the practice of mutilating sound, healthy teeth, at the widest portion of the crown, in order to enable the operator to pass a band beyond it to the gum-line, and, unless this is done, a space must exist between the band tooth which is not perfectly filled with even the thinly mixed cement, and which inevitably will lead to a disintegration of the cement and a failure of the work, if not also of the teeth thus encircled by bands. Occasional excuses undoubtedly exist for band-bridge work. The operator perhaps can predict the probable length of life of the

teeth, to which a fixture could be attached, to be only a few years, and that the period would hardly be lessened by a band fixture; or in the case of an elderly person, whose earthly career may be judged in the same manner; or in the calling of the patient may be found the excuse. A prima donna or an orator may find no end of comfort in such a fixture. Be thoughtful in selecting cases, be honest in advising the work, don't stretch the case to meet the work. Don't be weak and do the work because your neighbor does it. Don't yield to a demand created by quackery, and, above all, don't let the almighty dollar have too great a place in your thoughts while advising the work.

DR. ARTHUR HOLBROOK, of Milwaukee, read a paper entitled

AN UNBORN IDEA — HENCE UNNAMED.

which will be found on page 497 of the REVIEW.

DR. E. S. TALBOT, of Chicago, delivered a very interesting lecture on "Etiology of Irregularities of the Teeth," and illustrated his remarks by drawings. The principal features of the lecture will be found in an article on the same subject, which appeared in the July (1888) number of the *Dental Cosmos*.

DR. G. H. McCAUSEY, of Janesville, lectured on the "Structural Elements of the Teeth, Peridental Membrane, Pulp, Periosteum and Alveolus." The illustrations used were bromide enlargements, from photo-micrographic negatives of the tissues themselves. Among the numerous illustrations of various tissues were photographs of pulp-tissue showing the basis substance, fibrous tissue, nerve-bundles, arteries and capillaries, with the odontoblasts well defined and very much enlarged. Those of the dentine showed the fibrils of the odontoblasts, together with their anastomosis. The peridental membrane showed the principal and other fibres, besides the cementoblasts and osteoblasts, as well as nerves, lymphatics and capillaries. One picture showed the osteoblasts greatly enlarged, and another the transverse section of the neck of a tooth at the gingivus, showing the coalescence of the peridental membrane with the periosteum.

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ABOUT TIME TO CALL A HALT.

A short while ago a young man about thirty years of age was in the office of the writer for an examination of his teeth. Taking an explorer and a mouth mirror to begin the examination, we found five gold crowns in his mouth ; this was not surprising as we have seen a still greater number in many other mouths. In this case, however, no teeth had been lost, and we were led to remark that "he had several gold crowns." "Yes," said he, "my former dentist is having quite a run on crowns." He further said, "that is why I left him." His remarks and other observations that we have made is the cause of the title of this article. It seems that a good many dentists are having "runs on crowns." One dentist said, "I do not fill many teeth now, it is mostly crown and bridgework that is called for." Another said, "My income is much larger since crown and bridgework became fashionable"; still another, "It is a large part of my practice." We began the practice of dentistry before such work was done to any considerable extent, and very many teeth of that day were filled that are now crowned, or have bridges attached to them. It is a question whether much of the crowning that is now done is of as much value to the wearer as filling would be. A great deal of it is very conspicuous when the lips are but barely parted, and still more of it is distressing to look at when the mouth is fully opened. When teeth are naturally somewhat close to each other and the arch is unbroken, we question the value of crowns on the third molars, and occasionally on split bicuspid. Fewer

teeth are sometimes more valuable than a well fitting crown, under such circumstances. Not very many crowns of the best workers are thoroughly well adapted to the necks of teeth, hence they become a source of trouble to adjacent sound or filled teeth. A poorly fitting crown is a detriment to the adjacent tooth from its adjustment, as food lodges about the edges, microbes are permitted full scope, and the gums are turgid or bleeding from the outset. It can not be contended that porcelain faced crowns are less liable to fracture than natural filled teeth, so no saving is effected for the pocket of the patient. Gold crowns are liable to loosen, even when set with the best cements and pin anchorages. Crowns are not as easily kept clean as natural teeth, whether filled or unfilled. In case of pericemental trouble it is more difficult to reach the interior of a root when crowned than when a filling is present.

Many bicuspid teeth can be filled with gold as cheaply as crowns can be adjusted, and they look infinitely better and in many cases will last longer and be more serviceable to the patient than when crowned. There is a strong temptation for moderately good operators and poorer ones to make crowns for such teeth, because their defective work will not so soon be discovered by the patient. A considerable percentage of living pulps are destroyed to enable operators to fit crowns, and numbers of them die when all gold crowns are jacketed over living teeth from thermal stocks. Many discolored teeth are cut off for crowning because the operator will not make a persistent attempt to bleach and fill them. Living teeth are mutilated to receive crowns, when a single bicuspid is inserted as a bridge, to become a source of discomfort to the wearer after a short period. It is the injudicious, unnecessary and damaging crown and bridgework that we protest against, and not the necessary and inevitable operations that we condemn. There is reason in all good things and none in work that is needless and harmful. We have seen one mouth with four bridges in it and a separate crown on a cuspid. This work was all done fairly well, but the pain and suffering of the patient during the time of its performance and afterwards, can not be counted in dollars, nor the loss of his time either. It has all proved valueless in less than three years, and has caused the loss of two teeth and the pulps of three others. The patient would have

done better with filling the teeth; his mouth would have been cleaner, his comfort greater, he would have had more teeth than he now has, and more money in his purse too. We believe that fewer teeth need crowning, and that fewer bridges could be inserted without detriment to health than are at present so treated. The efficacy of filling need not be expatiated upon, as it is a proven fact. It needs more honest labor in its performance, a better judgment in its primary execution and a true desire to do what is best and what promises to be of the longest permanent benefit to the patient. Is it not "About time to call a halt?"

INTERNATIONAL DENTAL CONGRESS.

The August issue of *L'Odontologie* has an official notification of the contemplated International Dental Congress of 1889. The dental schools of Paris and the dental societies of Paris and France have united and the committees have been appointed to do the work of bringing about an International Dental Congress. The committees of conference met July 27 and 31. The committees were composed of MM. David, Dubois, Godon and Poincot on the part of "The General Association of Dentists of France and the Odontological Society of Paris," and MM. Brasseur, Damain, Gaillard and Saussiné representing the "Odontechnique Institute of France and the Odontological Society of France." Having decided that an International Dental Congress in 1889 would be both useful and profitable for the advancement of the dental art and science for the world in general and France in particular, a preamble and regulations as follows was adopted: On the occasion of the holding of an universal exposition in Paris in 1889 the numerous scientific societies of Paris will organize international congresses on various subjects. The committees are of the opinion that this will be the time for holding an international congress. Considering the inconvenience of congresses having a too extended range or too large a number of specialties assembled at once, as witnessed in recent scientific congresses, the commission believes that odontology is a science sufficiently important to form usefully a special congress, rather than to be lost as a subsection in a general congress. Such a congress could deal with

subjects of special value to the dental art. Considering, lastly, the probable presence in Paris of many French and foreign visitors to the exposition, the commission believes that there will be the elements of a professional international reunion, numerous and authoritative; thus it will be possible to give an exhibit before an assemblage of competent judges of the dental art of different countries, and to study questions of importance to the whole profession, finally to note the improvements in France during the past ten years, due to the activity of our two professional societies. For these reasons the commission is of the opinion that a reunion at Paris of an international congress of dentists in 1889 will prove useful and profitable for the advancement of the dental art in general and of French dentistry in particular. * * * Considering the favorable mention that has been given to the idea of a congress by the foreign professional press, and the number of our foreign confrères who at different times have announced their willingness to lend their aid and presence in this undertaking, the commission believes, from this encouragement already received, that prominent members of the profession in foreign countries will deem it an honor to take part in the aforesaid congress. With this knowledge, the commission will state that the conditions are satisfactory which will permit the body of French and foreign dentists to assemble in such a projected congress.

* * * * *

PROJECT OF THE CONGRESS.

An International Dental Congress will be held at Paris in 1889 under the auspices of the two French professional bodies as follows: "The General Association of Dentists of France and the Institute Odontotechnique of France, the Odontological Society of France and the Society of Odontology of Paris." All dentists practicing in France or foreign countries are invited to participate in the congress. The dentists of France alone will pay a fee of twenty francs. The congress will take place in the month of August on a date to be determined.

DURATION OF THE CONGRESS.

The congress will be in session one week. It will comprise written and oral communications and practical demonstrations on dental art and the collateral sciences. The reading of papers and discussions will take place in the afternoons. The practical demonstrations will take place in the mornings.

MEETINGS.

The opening and closing meetings will take place in a public hall to be named. The meeting of sections will take place in the lecture halls of the two dental schools, and the practical demonstrations in their clinic rooms and laboratories.

PAPERS.

To give order to the work of the congress and facilitate discussions, various sections have been established, as follows: Sec. I.—Anatomy and Physiology, Normal and Pathological. Sec. II.—Operative Dentistry, Special Therapeutics and Materia Medica. Sec. III.—Dental Prothesis and Orthopedy. Sec. IV.—Deontology and Education. Communications will be presented in each section under the following rules: First, the deposit of manuscript papers, either in French, English or German, the conclusions being in French; Second, discussions on the aforesaid conclusions; Third, investigation and discussion of questions proposed for the consideration of each section, by the organization of the congress and the vote on the conclusions.

The administration of the congress will translate into French and publish the conclusions of authors, if sent in two months before the meeting opens.

The discussions will take place in the three official languages.

CLINICS.

The practical demonstrations will comprise the execution of operations in operative and prothetic dentistry and the exhibition of new methods and appliances.

ADMINISTRATION.

The governing body will consist of eighteen members named by the participating societies, who will have charge of the financial and other business arrangements of the congress, and called the commission of organization and administration of the congress. In addition to this commission of organization and administration of the congress, there will be a general organization for the scientific direction of the congress, comprising honorary presidents, presidents, vice presidents, French secretaries and secretaries of the different countries represented in the congress. They will have charge of the general meetings and the meetings of the sections. The French members of this organization having charge of the scientific work, will be chosen by the commission of organ-

ization and administration and chosen, as far as possible, in equal numbers from the two societies. The foreign officers of the general organization will be selected by the Odontological societies of each country, upon invitations which will be addressed to them and after their approval by the committee of organization.

The foreign general secretaries will be considered the representatives of the commission of organization, for the purpose of securing papers and attendance at the congress.

OFFICERS OF SECTIONS.

The president and other officers of the various sections will be appointed by the committee on organization and administration, from the members in attendance.

GENERAL MEETINGS.

The work of the congress will be opened and closed with appropriate ceremonies at two general meetings of the entire membership.

PUBLICATION.

The transactions will be published complete, in the French language, and distributed gratuitously to the members.

The two societies have approved of the above rules and regulations for the organization of the congress and have named the undermentioned as the commission :

For the Society of Odontology of Paris, MM. Bloeman, M.F.P., Chauvin, Dr. David, Dubois, Godon, Kuhn, Papot, Poinso, Ronnet.

For the Society of Odontology of France, MM. Brasseur, M.F.P., Crignier, Damain, Dubrac, Ducourneau, Dr. Gaillard, Dr. Marchandé, Pourchet, M.F.P., Saussiné, M.F.P.

The two commissions met Wednesday, August 8th, 1888, and adopted the project of the resolutions and of the congress published above, and named an under commission composed of :

For the Odontological Society of France, MM. Dubrac, Pourchet, Saussiné.

For the Society of Odontology of Paris, MM. Dubois, Godon, Poinso.

DOMESTIC CORRESPONDENCE.

HOW TO MAKE A CONTOUR GOLD FILLING OUT OF THE MOUTH.

To the Editor of the Dental Review :

Dear Sir,—In my last communication, published in the July number of the REVIEW, I promised an account of the meeting of the Second District Society, which was to be held in Newburgh. Notwithstanding the fact that considerable time has elapsed, I will keep my word ; or rather I will relate an incident and what grew out of it, which, having taught me much, may be of use to your readers.

With some of my Brooklyn friends I reached Newburgh bright and early and repaired to the office of Dr. Straw, where the clinics were announced to occur. Shortly after, Drs. Ottolengui and Gueran came in together. The latter gentleman was president of the Brooklyn Society, which is distinct from the Second District. He introduced his companion to Dr. Straw. Dr. S. almost at once said :

“ I wish both of you to look at my mouth and advise me as to what you would consider best to be done. I do not care to be made beautiful. All I want is to be able to chew corn ”—“ and to drink apple jack,” interrupted a voice *sotto voce*.

The two gentlemen proceeded to make an examination, being joined by Dr. VanWoert, who came in at the moment. Other men present crowded about the chair, myself, of course, as usual conspicuously in the front row. The condition was as common as it is deplorable and difficult. Several of the molars above and below had been lost and the remaining members had been worn away till not more than half their lengths remained. Dr. Ottolengui, after looking over the teeth, said :

“ I should build the teeth up with gold ! ”

“ I had that done,” replied Dr. Straw, “ and all the contour fillings have come out as you see.”

“ Have them put back again by another man,” said Dr. O.

“ This is the fellow who put them in,” answered Dr. Straw, touching with his hand Dr. Pitts, the president of the society. Dr. O., as an invited guest, felt foolish and endeavored to retreat by saying :

"If that is so it is proven that gold will not serve, and I should, in refilling, use gold and iridium, as suggested by Dr. Wheeler, of Albany."

"Bah!" said Dr. Gueran; "Ottolengui, you are afraid of Pitts. He does not know anything about filling teeth, so you need not bother with your fancy filling. Gold is good enough any day, if properly packed with the electric. I'll fill those teeth and they won't come out."

"I have listened to you two talk," chipped in Dr. VanWoert, "and I am satisfied neither one of you is any better than Pitts, if as good. What is more, I doubt if you ever did any work of this kind before. If you have, your patients have gone elsewhere, after the failure of your fillings, to have the teeth fixed by some one who knew how to do something." This badinage, of course, all in the most friendly spirit.

"What would you do, Van?" asked Dr. Straw.

"Well, whilst these fellows have been blowing their trumpets and browbeating Pitts, I have been studying the case and I notice that the majority of the teeth are dead. I should therefore make solid gold tips with pins attached to go into the canals, and I will guarantee that they will not wear or come off."

"How can you make a solid tip?" asked Drs. Gueran and Ottolengui at a breath.

"What did I tell you," said Dr. VanWoert; "I knew you fellows were all talk. I'll tell you what I will do. If Dr. Straw will come to Brooklyn I will make some of the tips and place them, and you two may come and take a lesson."

Whilst the most of this was jesting, the end of it was that Dr. Straw agreed to visit Brooklyn and become the victim of all three experiments.

At the appointed time the office of Dr. VanWoert was well crowded with dentists who had been invited to attend. The teeth on the lower jaw were selected and as there were two with living pulps, they were assigned one each to Drs. Gueran and Ottolengui. Dr. G. built up a bicuspid, making a very handsome filling, using soft foil and the electric mallet. The operation consumed nearly two hours. Then Dr. Ottolengui made a similar filling on the opposite side of the jaw, using gold and iridium and the hand mallet. To those who may not have heard

of this combination it may be as well to explain what it is. A piece of iridium is placed between two pieces of gold and rolled into strips gauging about 60. It is very difficult to manipulate, being stiff and unyielding. A very dense, hard, light colored filling is produced and is excellent for exposed positions and biting surfaces. In both instances the operators learned their first lesson of Dr. VanWoert. He prepared the teeth for filling. No undercuts whatever were made. Four gold anchor screws were placed in the crown of each and proved ample. They were introduced by means of a beautiful set of screws and taps, which may be found described in the *Cosmos* for February, 1887, page 91. It must be here noticed that all these teeth being more or less loose, the long operations of filling were very trying to Dr. Straw. (Dr. O. was even longer than Dr. G.)

Meanwhile, Dr. VanWoert had been busy making the gold tips. I may also mention interjectively that whilst Dr. Gueran was operating, Dr. VanWoert placed a crown for Dr. Ottolengui in exactly 34 minutes. He cut off the defective crown of a bicuspid, filled the canals with the preparation which I will give later, fitted a gold band, and into that a porcelain tip, finally setting the whole with oxyphosphate. The doctor was warmly applauded for the neatness and despatch with which he performed this operation.

Let me now describe how he made the tips. A bit of thin platinum (60 gauge) was burnished over the end of the tooth. Then with this still *in situ* a strip of same material was wrapped around the tooth and trimmed to the desired height. This, when removed, gave a platinum tube exactly the shape of the tooth and having a second piece of platinum forming a floor across its center. Next he mixed plaster and pumice and set the platinum into the composition until buried up to the top. When this was ready, with a Burgess blow-pipe, he melted 20-carat plate into his platinum matrix, afterwards a platinum pin was soldered to the center of this cast tip, and when placed in position and secured with cement the platinum which had served as a matrix was all removed with corundums and the whole polished, the result being a contour filling made out of the mouth.

Most of these teeth had dead pulps in them, and after cleansing canals with Gliddon drills, he filled with the following paste:

Iodol, gr. x,

Zinc Oxide, gr. xx,

Vaseline carbol, q. s. to form a thick paste.

This is placed in the canal and pressed up with a bit of bibulous paper, after which the entrance to canal is sealed with oxy-phosphate if a filling is to be inserted. If a crown is to be placed the oxy-phosphate is placed around the pin. Ulcerated roots so treated give no further trouble. Before giving the result of these operations I will tell you how to make a first rate solder block, according to Dr. VanWoert: Take a bowl and partly fill with water; mix in equal parts of powdered charcoal and pumice until quite muddy in consistency; next add plaster slowly, stirring constantly till quite thick, being careful to avoid lumps; pour on a marble or glass slab and shape as fancy dictates. This will be found an excellent device.

After the clinic, which occupied all of the morning and most of the afternoon, a dozen of the party repaired to Coney Island, where the doctor was given a chance to try his teeth, an excellent dinner and very fair substitute for apple jack having been provided.

I have learned within the week that Dr. Pitts, on a recent visit to Newburgh, called on Dr. Straw and found him in such agony with one of his teeth that at his request Dr. P. removed the offender, which, as Nemesis would have it, was none other than the one Dr. Ottolengui had filled. This emphasizes the lesson taught in my last sermon and tends to discourage hasty diagnoses at clinics and the assumption of knowledge not really possessed. It was certainly a coincidence after the accidental disparagement of Dr. P. by Dr. O. that Dr. P. should be called upon to remove the tooth filled by Dr. O. When it is remembered, too, that the tooth was not drilled into (the drills used for setting the screws have a shoulder which prevents the possibility of reaching the pulp) in a way which could have killed the pulp, and that nevertheless the pulp did subsequently die, it must be seen that there be teeth for which the mallet process during an hour or more is anything but salutary.

I could relate other valuable hints picked up then and since from Dr. VanWoert, who is a genius in his way, but "here endeth the first lesson." I have but space left to say that the soci-

ety meetings for the winter have begun, and to relate a *bon mot* which I heard at the First District meeting on Monday night. A lady called on Dr. Dwinelle and asked him to treat her daughter. "She has a terrible disease," said the lady; "I think it is called *Aurora Borealis*, and anyway I know it was *invented* by Dr. Riggs, of Hartford." Yours truly, ODONTO BLAST.

New York, Oct. 3d.

DUE TO IMMEDIATE ROOT FILLING?

STERLING, Ill., Sept. 19, 1888.

To the Editor of the Dental Review :

DEAR SIR — I send you a piece of bone which a patient of mine says he removed from his mouth some time ago. The patient in question came to me from a neighboring town. In examining the mouth, I noticed that the first upper molar of the right side was missing, and a very unusual depression of gums at that place. My first impression was that he had had an operation for necrosis, and I asked him about it. He said that the tooth had commenced to ache soon after having been filled; that it had been filled at one sitting, without treatment; so it is not likely that arsenic was used. He had it extracted shortly afterward, but the pain continued, and there soon appeared a discharge of pus from its socket. The patient went to the dentist for treatment, and he sent him to a physician. The physician said it was the dentist's business to treat it, and the dentist said it was the physician's. They wrangled about it and didn't do anything for him, so he went to another physician, who, he says, syringed it out every day for about a month, and, as he couldn't see that it was getting better, he quit. The discharge of pus continued for about a year, until, one night, he removed this piece of bone with his finger-nail, after which it healed, and has been all right since. He said he had the piece of bone at home, and I requested him to bring it to me the next time he came, which he has done, and I send it to you.

What do you think of it?

Respectfully,

T. W. BECKWITH.

[The piece of bone is nearly the size of a chestnut, about the same thickness, but not so wide or long. It is evident that it is a portion of the alveolar process, from the palatal aspect, and extending to, or quite to, the floor of the antrum.—EDITOR.]

ABOUT PLAGIARISM.

HENDERSON, KY., October 6, 1888.

To the Editor of the Dental Review :

DEAR SIR — My attention has been called to a short paragraph in the September number of the REVIEW, headed "Plagiarism," and signed by one T. A. Scott, M. D.

The article, "Antiseptics in the Oral Cavity," read by me before the Kentucky Dental Association at Louisville, *was* largely taken from Gerster's work, and I so stated at that time. Full credit was given also in the original paper, but the person who copied the article with a type-writer, failed to put in the statement and also neglected to use quotation marks. There was no intention upon my part to steal from so admirable a work as Gersters, and, in fact, it would have been a matter of impossibility to do so, as it goes without the saying that quotations from a book so widely known would, without the proper credit, be recognized *at once*.

T. A. Scott, M. D., not being a dentist, goes out of his way to attack me in a DENTAL JOURNAL, and must have done so *merely* to call attention to the fact that HE had read so splendid a work as Gerster's. Yours, etc.,

L. A. KING.

[We are glad to make public this letter, as the facts are as stated by Dr. King. Our copy had no quotation marks at the time of receiving the article, and we had not at that time read Gerster.—EDITOR.]

REVIEWS AND ABSTRACTS.

We take from a Dublin paper the following :

THE DENTAL MUSEUM.

One of the most interesting features in connection with the meeting is the Dental Museum, which has been opened in the Anatomy Room of the Medical School. The room is divided into four sections, *viz.*, manufactures, literature, surgical, and work room. The surgical section contains over eight hundred specimens of abnormal teeth. Each specimen is enclosed in a little glass tube, and placed on a mahogany rack designed by Dr. Booth Pearsall. By this arrangement all the specimens can be satisfac-

torily examined within a comparatively brief space of time. On adjoining racks there are numerous plaster models showing irregularities of teeth and cases of cleft palate. The apparatus used in treating cases of cleft palate are also exhibited, together with antique dental instruments, some of them dating as far back as the 16th century. Among other ancient exhibits there are dentures carved in ivory, dentures with natural teeth inserted in ivory, and dentures with artificial teeth set in ivory. In the Human and Comparative Pathological Section, the specimens include a gorilla's head with a large canine tooth in the ramus of the jaw—the only specimen of the kind known. Casts of the bones of the *hesperonis regalis*, a bird with teeth, have been lent to the association by Professor Sollas, and they find a place in the museum. The bird was only recently discovered in America, and its bones are at present in Yale College. Professor Bennett has supplied a number of specimens, showing the effects of rheumatic arthritis on the jaws and teeth. The head of a pug dog occupies a place on one of the racks. The teeth of the dog are covered with tartar, and the sockets are absorbed. This, it appears, never occurs in the animal in its wild state, and only a few cases of the kind have been discovered in pet dogs. On the same rack there is a tooth in the lower jaw of a marmot, with odontome connected with the end of the root of the left incisor. The peculiarity of this tooth is that it grows continually, and the pulp or tooth-forming substance at the root presents the appearance of a tumor. In this section there are many curious specimens, which will possess more than a passing interest, even for visitors unconnected with the profession. The majority of them have been temporarily placed at the disposal of the association by the Odontological Society of Great Britain, Trinity College, and the Royal College of Surgeons. In the work room there are all kinds of appliances for the rapid execution of work, including the latest designs in seats, lathe heads, vises, and other requisites. On the walls of the museum there are exhibited excellent photographs by Mr. J. Howard Mummary, of London, showing the interglobular spaces in dentine, and the passage of the dentinal tubules across the spaces. Transparencies furnished by Mr. Andrew, Belfast, illustrate various facts in cleft palate, and dental anatomy and pathology. A small room adjoining the museum

serves as a post office and telegraph office. It is in charge of Miss Croker, of the Women's Society, Kildare street.

BOOKS RECEIVED.

A Practical Treatise on Artificial Crown and Bridge Work. By Geo. Evans; with 500 illustrations. Philadelphia: The S. S. White Dental Mnfg. Co., 1888.

PAMPHLETS RECEIVED.

"In Absentia," by J. Foster Flagg, D. D. S. Philadelphia, 1888.

Report of the Commissioner of Pensions for 1888, by Hon. J. C. Black, Washington, D. C.

Constitution of the "Delta Sigma Delta" Fraternity. Geo. N. West, Supreme Scribe, Chicago, 1888.

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To the Editor of the Dental Review:

DEAR SIR—Will you please give your idea as to varnishing cavities. Will not varnish at the margins do harm?

September 4.

Yours resp'y, G. W. D.

MEMORANDA.

Have you tried Guaiacol as a disinfectant?

Dr. W. H. West has returned from Europe.

Dr. W. Xavier Sudduth was in Chicago during September.

Dr. M. F. Finley, of Washington, is a deserter from bachelorhood.

Dr. Otto H. Staehle, lately of Munich, Germany, has returned to Joliet, Ill.

Drs. Kester and Stowell, of Chicago, have gotten out a new copper amalgam.

Dr. A. M. Dudley, of Salem, Mass., paid a flying visit to the West last month.

Dr. W. B. Smith has gone West to seek his fortune. Our best wishes attend him.

Dr. W. G. Beers, of Montreal, was at the Dublin meeting of the British Dental Association.

On page 553 of the September number of the REVIEW, first line, the word "osteoblasts" should read "osteoclasts."

Drs. T. E. Weeks and C. A. Kitchen have been visiting friends in Chicago, and looking over the various dental colleges while here.

When whistling at public entertainments becomes all the rage among the ladies, another argument for the preservation of the natural teeth will be added to the list.

Dr. Mitchell's rubber dam holder, which is made by Ash & Sons and G. W. Rutterford & Son, London, is a very comfortable appliance. It has been in constant use for four or five months and all patients are pleased with it.

The report of the Georgia meeting of dentists in the *Southern Dental Journal* for September, is very readable. State and local societies, as a rule, furnish the most readable remarks and generally the most practical ones, too.

The British Dental Association had adopted a rule as to the admission of visitors which is unique. It requires them to obtain a "visitor's ticket" from the proper officer. This gives the association opportunity to exclude offensive or quackish visitors entirely from the meeting.

The name of the author of the short communication on page 495 of Vol II, DENTAL REVIEW, is Dr. L. West, Marionville, Mo. The communication was unsigned at the time of its receipt, although the authorship was known, and in the hurry of getting out the August issue it was overlooked.

Mr. J. J. Andrew, of Belfast, gave a clinic at the late Dublin meeting of the British Dental Association. He is an accomplished operator in gold. He used the electric mallet in this instance, with a storage battery. Mr. Andrew exhibited some beautiful micro-photographs of sections of teeth and foetal jaws. He will shortly contribute a paper to these pages.

Ways and means to obtain a better enforcement of the Dental Act against the quacks in the large cities was an important part of the business of the late meeting of the British Dental Association. The situation is somewhat analogous to the problem which vexes the Illinois State Board. It is to prevent the employment of unqualified men by quack institutions.

Professors L. C. Ingersoll, I. P. Wilson and W. O. Kulp are no longer members of the faculty of the Dental Department of the Iowa University. Dr. R. L. Cochran, of Burlington, is the new professor of Operative Dentistry and Therapeutics. Prof. A. O. Hunt has become dean of the faculty. The governing faculty consists of three professors now, instead of five or six, as was formerly the case.

The dentists of eastern Iowa held a meeting in September at Cedar Rapids. The secretary has not forwarded us an account of it, so that we are not able to announce the officers or next place of meeting. Dr. G. North delivered the presidential address, which was printed in full by one of the daily papers. Addresses of a semi-professional nature do a vast amount of good in educating the public, and this one in particular was a creditable effort.

The Dental School of Paris has removed into larger quarters. A cut of the external and internal arrangement of the building is printed in the August num-

ber of *L'Odontologie*. We congratulate the "École et Hôpital Dentaires de Paris" on their prosperity and the excellence of their new installation. The building will be tested to its fullest capacity on the occasion of the assembling of the International Dental Congress of 1889, which is to take place in August.

It seems not unlikely that the value of copper amalgam as a filling as compared with other amalgams is overestimated in America. That it has been placed on too high a plane as a caries preventive. Dr. St. George Elliott, of London, maintains that copper amalgam is not exempt from shrinkage or change of form in setting. This opinion is substantiated by experimentation and also by observation. Probably nine-tenths of the amalgams used in Great Britain are of the copper variety and dentists are called upon constantly to remedy the decay which starts around them.

The fall meetings of dental societies have a sombre aspect, not unlike the turning leaves. We know of one gentleman who traveled eighty miles to attend a *conversazione* in Chicago, and in fifteen minutes after his arrival he had the "blues." Dental societies, in order to attract attention and attendance, must have live presiding officers and efficient workers in committees, and an efficient headsmen to decapitate cranks. Prosy speakers who repeat for the fourth or fifth time a weak statement to bolster it, so it will stand alone, need to be reminded that some personal journalism will be forthwith produced, if they do not cease to "bore" societies. Essayists are in duty bound to send papers or come and read them, when they are on the programme, and not delay the proceedings by being absent. A word to the wise, etc.

We quote the following sentences from a letter of Dr. George H. McCausey. It would be well to heed the advice given, and to aid, whenever we can, the local dental societies: "They need a helping hand and encouragement. There is a class of dentists in small towns who need to be rubbed against and shown that every dentist is not his enemy, even though he may be engaged in the same legitimate calling, and that, although his opinions may be criticised, his critic may yet be his firm friend and co-worker. There are many good men who need to be broadened. Such men finally become among the best men we have. They simply need a little encouragement."

DR. D. F. MCGRAW'S FORMULÆ.

"His medicinal preparation is a 12 per cent solution of cocaine (Merck) colored with a tincture of alkanet root and alcohol. Dr. McGraw cannot explain the action of the alkanet but he knows, having experimented, that the alcohol alone has not had the desired effect.

For relieving periodontal inflammation his preparation is 7 parts of saturated solution of Chloride of Sodium, and 1 part Ergot.

For Pyorrhea Alveolaris $\frac{1}{2}$ oz. Hammamelis, 1 drachm Aconite root, $\frac{1}{2}$ oz. Calendula.

He decomposes the medicament by the galvanic current of the Galvano-Faradic battery, using ordinarily three or four cells, but in inflammation more, sometimes as many as eleven, Very Respectfully Yours, T. E. WEEKS.

STUDENTS' SOCIETY.

To the Editor of the DENTAL REVIEW :

New York, Sept. 12, 1888.

Dear Sir—The Students' Society of the New York College of Dentistry was organized in November of 1887, by a few junior members of that College.

It is now approaching the beginning of its second year of existence, with every prospect of usefulness and success.

Its membership, both active and honorary, now includes upwards of one hundred men, while new members are being constantly received. As this is the pioneer society (such is my belief) among dental students in America, I write to inform you of this advance step in the study of dentistry.

The society gives the student opportunity for comparing with his fellows ideas and methods; trains him in accurate and scientific statement of facts; and by the feeling of equality permits him to freely advance and meet arguments; thus, in many ways, preparing him more fully for the activities of professional life.

For a more detailed account of its aims, etc., please consult the enclosed copy of the Constitution and By-Laws.

Trusting the above may prove of interest to you, I am, very respectfully,

E. H. BABCOCK, President.

The following is an excerpt from an interesting editorial published in the *Dublin Daily Express* on the occasion of the visit of the British Dental Association in that city: "The association will bring into contact the ablest men in the profession, and their intercourse can not fail to be productive of mutual advantage, in the discovery of new means of facilitating and improving their handiwork, and removing the hindrances which prevent the profession, possessing a larger share of public confidence and support. One of the chief obstacles in the way is the expensive nature of the work, as well as the painful ordeal which the sufferer is obliged to go through. Only a fractional part of the community can afford to obtain the services of a skillful operator, who can repair the physical defects which are often as much the cause as the effects of ill-health or local disease. To not only the poor but thousands of the middle classes who have to earn their livelihood by hard work and live from hand to mouth, even if it be toothless, the door of relief, which is open wide to the affluent, is hopelessly barred. The profession can make but little way in obtaining the grateful esteem of the community until the benefits which it is capable of conferring are brought within the reach of the masses. It is useless to inveigh against quackery and empiricism so long as the great body of the people are shut out by a massive gate which only a golden key can open. They will seek relief wherever it is offered to them, and must be content with the most inferior substitute for dentistry, if it gives them even temporary respite, just as they have to be clad and shod in rough and poor material because it comes within their means of purchase and they can afford no better. More attention will be called to this long neglected duty by the greater publicity given to the proceedings of the profession and by the discussion of the subject in its sanitary aspect. But the necessity will not be the less urgent, but rather more so, to widen the platform of the profession and bring it nearer to the level of popular requirements. It may impair its dignity, but it will vastly increase its usefulness, and if economic considerations be kept more in view, there will be no longer any pretext or supposed need for resorting to such charlatans and impostors, who delude and defraud the populace, while claiming credit as benefactors of the human race."

THE PROSECUTION OF AMERICAN DENTISTS.

Mr. Bushby, the sitting magistrate at Worship Street Police Court, London, on Tuesday, delivered judgment in the prosecution of Messrs. Coe and Huntley,

summoned as "doctors," of the American Dental Association, 44 Finsbury square, for having within the past six months taken and used the letters "D.D.S.," or some other name, title, or description, implying that they were registered under the Dentists' Act, 1878, or were specially qualified to practice dentistry, they not being registered, etc. Mr. Bushby said: The question here is whether the defendants, by describing themselves as "doctors of dental surgery" of Pennsylvania University and Boston College respectively, have used titles implying that they were registered under the Dentists' Act, 1878, or that they were specially qualified to practice dentistry. In either case, since they were not in fact registered, they would be liable under the 3d section to a penalty of £20. The Act seeks to protect the public against quacks and knaves by the following amongst other provisions: "Persons styling themselves dentists must be on the register, and are liable to be struck off for misconduct. Before being registered they must satisfy the general registrar that they have proper certificates of competency, and only such foreign certificates are admissible for the purpose as are recognized in the list published by the general council." Now, certificates from Pennsylvania University and Boston College are not included in this list. I think, therefore, that the defendants can not be said to have used titles which implied registration, and the only remaining point is whether the titles imply a special qualification to practice dentistry. It was urged for the defence that the words "specially qualified" must be restricted to recognized qualifications, such as D.D.S. of Michigan or D.M.D. of Harvard. But this would go far to cripple the Act, for the only titles verbally specified in the 3d section are "dentist" and "dental practitioner." By merely substituting such equivalents as dental surgeon or doctor of dentistry, or, as the defendants have done here, doctor of dental surgery, the protection to the public would be slight indeed. On the other hand, if the Legislature meant to enforce registration on every one using a title which implied that he was specially qualified to practice dentistry in any way whatever, that person would come within the Act as effectually as if he styled himself a "dentist" or "dental practitioner." The latter seems to me the rational view, and I therefore convict the defendants. Mr. Waddy has dwelt on the hardships of their particular diplomas being unrecognized as titles to registration. But, before practicing here, I do not see why they should not have qualified by the means open to English dentists. Taking into consideration, however, that the clause might have been more clearly expressed—and no question has been raised as to the right of the defendants to the designations they have adopted—I think it will be sufficient to impose in each case a fine of £5 and 2s costs.

The solicitor for the defendants intimated that he would give notice of appeal.

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CHICAGO, NOVEMBER 15, 1888.

No. II.

ORIGINAL COMMUNICATIONS.

INFLAMMATION.*

BY GEO. H. McCausey, JANESVILLE, WISCONSIN.

In the effort to write a paper on any purely scientific subject, one is confronted by the fact that the writer often finds himself unable to make himself understood.

Were all dentists close students, given to investigation, the task would be found much easier, as they would thereby have in a degree fitted themselves for a more perfect comprehension of the meaning of terms employed to convey ideas, and which, from necessity, can not be made less technical, as none others can be used to convey the same meaning.

The writer was requested to prepare an elementary paper on the subject of inflammation, but finds it not an easy matter to do as requested.

It is a subject which may, and will in this case, have to be greatly abridged, but there seems to be no clearer way than to say all that can be said regarding the subject, without taxing the patience of the hearer.

We will try and ascertain the character of the lesion and some of the forms which it may assume, its progress and sequence.

Aside from caries, there is no one other lesion which the dentist is oftener called upon to treat than inflammation, and the success he meets with in its treatment, will be in a ratio proportionate with his comprehension of its etiology, pathology and therapy. Yet how many of us have studied thoroughly its clini-

*Read before the Northern Illinois Dental Society.

cal aspects sufficiently to determine its form, exact location, its degree of intensity and probable sequence.

In the study of inflammation we naturally seek to define it by the use of some term which will clearly convey to our mind all that it means. This we can not do, for the term implies a series of changes involving the blood vessels and the structures in which they exist, and the changes are so many and varied, that no one term can convey a clear idea of its many processes.

Clinically, the existence of inflammation may be recognized by the presence of one or all of four different symptoms, namely, pain, swelling, redness and heat. The absence of either may be dependent in a degree, upon the texture of the parts where it is located.

It is a well established fact that the existence of inflammation is due to causes which effect vascular changes, which constitutes one essential feature, the textural changes being apparently a result of the process of vascular change.

The most common and one of the best methods of showing the results of vascular change, is through the transparent web of the foot of the frog or the tail of the tadpole.

If we place the expanded web of the foot of a live frog under a microscopic objective of sufficient power of amplification, we can study normal circulation in arteries, veins and capillaries. We can see the red and white corpuscles floating in the plasma or fluid portion of the blood. The red corpuscles will be found passing rapidly through the central portion of the vessel, while the white ones pass along the walls, and with a less degree of velocity, and on meeting with any obstruction, conforming to the shape of that obstruction. If, however, we apply an irritant, we shall perceive a decided change taking place. First, there is a dilatation of the walls of the vessels, accompanied by an increase in the rapidity of the circulation.

After a time the circulation becomes undulatory, and afterward, slower, with an accumulation of white corpuscles in the capillaries and smaller veins, and to the walls of which the white corpuscles now adhere, and, finally, an entire cessation of circulation takes place in the vessels within the area of irritation. At this time the white corpuscles, with certain numbers of red ones, pass through the walls of the vessels, between the cells compos-

ing them, and appear in the tissues around them, while, at the same time, the blood plasma passes through the walls and infiltrates the tissue. A change then takes place in the constituent elements of both the blood plasma and the white corpuscles, which produces fibrin. The result is, that the white corpuscles are changed to what we know as pus corpuscles; while the remainder of the blood plasma is known under the name of serum, which, by its infiltration, produces that condition which we know as oedema or swelling. Pain is produced by pressure upon the nerves. Heat is produced by the blood being furnished in more than normal quantity to the parts; while the redness is due to an excess of blood in the capillaries.

The elements produced by the migration of the white blood corpuscles, together with the red and the blood plasma, form what are known as inflammatory products. During this time there exists in the vessels a certain degree of circulation. Different cases show different and relative proportion of inflammatory products, and may exhibit different phenomena, dependent upon location and character of the tissue involved. We may note a certain modification of the process, in which the blood may entirely cease its circulation. In such cases, through lack of nutrition, the parts involved may die, and through the great intensity of the process, the breaking down of tissue may form cavities containing pus.

These cavities we know as abscesses, and the contained pus is composed of serum, pus corpuscles and particles of necrotic tissue in varying proportions.

That form of inflammation described, is the one with which the dentist has most frequently to deal, and is of that type which we will further consider in respect to cause, progress, probable sequence and therapy. The tissues most frequently involved are either the dental pulp, peridental membrane, periosteum of the jaw, epithelium, or, perhaps, all of these tissues at the same time.

These, like other vascular tissues, will from cause, take upon themselves inflammatory conditions of greater or less degree of intensity, dependent upon the cause or predisposition, and their continuation will often depend much upon the period at which the cause is removed and the therapeutic agent is applied.

We will now consider inflammation of the dental pulp and its

causes, the most common of which is irritation through partial or complete exposure, through process of decay, besides thermal changes and contact with extraneous matter, such as food and the like. The first stage is characterized by a slight pain, which is the first result of irritation, and varies in intensity correspondent with the extent of the irritation, and which may entirely subside upon removal of that irritation, or be aborted by the application of proper remedies.

Should such treatment be neglected, the pain will be further increased, by an excess of blood beyond the normal quantity in the vessels, and the pulp may pass through all the successive stages of the inflammatory process, namely, increase in the rapidity of circulation, succeeded by undulation, gradual slowing, accumulation of white blood corpuscles along the walls, emigration of corpuscles and plasma, infiltration of the tissue of the pulp with serum, which may cause sufficient œdema of the pulp to produce strangulation at its apical portion, causing complete stasis in its vessels and its consequent death. Treatment should be prompt, immediately upon the first symptoms. First, by an immediate removal, if possible, of the cause of irritation; secondly, by the exhibition of a therapeutic agent which will produce a diminution of the blood supply to the vessels involved, either by retarding the action of the heart or by diverting the blood in another direction by use of counter-irritants.

Should there be complete exposure, relief may be obtained by wounding the pulp sufficiently to cause bleeding, thus relieving the engorged vessels.

It is not unusual that, in cases of inflamed pulp, we find the peridental membrane involved in the disturbance. Here we have a tissue, like the pulp, containing nerves, blood-vessels and lymphatics, thus fitting it for the inflammatory process. Being, as it is, coalescent with the periosteum of the jaw, the periosteum may also share in any inflammatory disturbance of the membrane.

That degree of inflammation which is consequent upon and accompanies the death of the pulp, is not usually very intense in the peridental membrane, which generally soon recovers its normal standard of health.

The most common causes of inflammation of the peridental membrane are two: in case of death of the pulp (from whatever

cause it may be) it, like other animal tissues, soon decomposes. One of the products of pulp decomposition is sulphuretted hydrogen gas, the presence of which we have all recognized on opening a pulp chamber containing a deceased occupant.

It sometimes occurs that the pulp is devitalized through the inflammatory process induced by thermal changes, the walls of the pulp chamber being at the same time intact. Gases occupy a greater space than the elements from which they are evolved.

When decomposition of the pulp progresses in a closed chamber, the gas seeks an outlet, and there being none save the apical foramen, the result is a pressure upon and consequent irritation of the peridental membrane, producing the inflammatory condition. A prompt opening of a wall of the chamber will, in most cases, abort the inflammation.

There are other causes of the inflammatory condition in the peridental membrane which follows the death of the pulp. This fact leads us to a consideration of another cause. It has, during the past few years been established as a fact, that putrescence is due to the presence of vegetable micro-organisms which accompany and are responsible for it. They are recognized under the terms bacterium, microbe, etc.

There are many different varieties which meet with recognition by the student of bacteriology, and it has been demonstrated that certain varieties (at least), like other plants, elaborate certain poisonous alkaloid products. Like other plants, they require a suitable soil in which to grow. The broken down necrotic tissue of a pulp seems to afford a medium in which they may grow and rapidly multiply.

Passing through the apical orifice of a tooth, they prove an irritant to the peridental membrane sufficiently so to excite in its vessels, all the phenomena of inflammation in greater or less degree.

The essential process of the lesion is similar in both the pulp and the peridental membrane, but the resultant products vary, owing to the difference in structure. It is, as I believe, generally received as truth by pathologists at the present time, that in restoration from a condition of disease to that of health, the first process is a return of the diseased portion to embryonal elements. In case of strangulation and consequent death of a pulp, there is no method of renewal. Areas of dead peridental membrane and

periosteum may, however, be renewed by reparative process after liquefaction and subsequent removal by absorption. In all cases of death of an area of tissue through the inflammatory process, that portion of tissue at the periphery of the dead portion has shared in the disturbance; or, in other words, that portion which has escaped stasis is inflamed, yet not dead, but retains life through nourishment from the blood. The first process in the direction of a return to health being a return to embryonal elements, the subsequent proliferation of those elements from the inflamed living tissue is sufficient to furnish a proper amount of material for complete repair.

As a sequence of peridental inflammation we find that condition which we know as alveolar abscess, and is the result of an inflammation of sufficient intensity to produce a circumscribed necrosis of the membrane and alveolus, and subsequent liquefaction and absorption of the necrotic tissue effects the formation of a cavity filled with serum, pus-corpuscles and débris of the tissue which before occupied the space.

The pus is sufficiently irritant to excite decalcification of the bone and liquefaction of its cartilaginous matrix, and may extend in any or all directions, producing those openings through the alveolar plate which we call fistulous openings.

Septic bacteria may be present, causing septicæmia or blood poisoning. At times nature makes an effort to heal an abscess by deposits of granulation tissue lining the walls of the cavity, and of sufficient vitality to resist the encroachments of the pus, and which sometimes proceeds to effect rapid repair; and, at other times, may remain in the form of granulation tissue for some time. At other times it changes to the form of fibrous connective tissue, which being continuous with the peridental membrane, constitutes the pus-sac with which we are all familiar.

The irritation produced by the pus sometimes destroys the cementum, and even the inclosed dentine, which may afterward be repaired with new cementum through the action of the cementoblasts of newly formed peridental membrane.

What has been said of inflammation of peridental membrane is substantially true in cases of inflamed periosteum.

TREATMENT OF THE PULP, AND ROOT-FILLING.*

BY E. H. ALLEN, D.D.S., FREEPORT, ILL.

In choosing my subject, I am aware that much has been written upon this same subject, yet, as we each have methods that slightly differ, in accomplishing the same end, I have thought it might be well for me to give my views. I do not know of any other operation we are called upon to perform that bears more directly upon the salvation of the dental organ, than the treatment of the Pulp and Filling Root Canals. Think of the vast number of teeth that are saved, that otherwise would be lost, except we as dentists know how to intelligently deal with the pulp. Of course if every patient would give constant and close care to his teeth, we might manage to rarely, if ever, have any cases of this kind to treat; but the fact remains true, nevertheless, that patients will at some time or other be so unfortunate as to have some trouble with an aching pulp, or perhaps an abscess, resulting from inflammation of the peridental membrane. My purpose is to have this paper practical and to treat the case as it would come to us in our every day practice. For the anatomy, histology and physiology of the dental pulp, and the pathology of the inflammation of that organ, also of alveolar abscess, I refer you to the many writers in our profession who have handled that subject in a far more able manner than I am capable of.

Now, let us take a case such as all of us have probably had more times than once, say an upper bicuspid, having quite a large cavity on either the anterior or posterior approximal surface; we all know that such cavities nearly reach the pulp, in fact, many times expect to reach a pulp exposure, our patient complains of this tooth being a little sensitive when drinking anything hot or cold, but it has never really ached. So we apply the rubber dam—and right here I would advise, in every case possible, the use of the dam, do not try to approach an exposed pulp with the saliva continually running into the cavity and hiding everything from view. Having the dam applied, proceed to remove all soft decay; for this purpose I prefer a spoon-shaped excavator. Now, when I have removed all the soft decay, and have reached hard dentine, even though it be discolored, and have not yet found any expo-

*Read before the Northern Illinois Dental Society.

sure of the pulp, I should wipe the cavity with carbolic acid, dry it, and place a covering of oxyphosphate cement over the nearest points of exposure, leaving room enough in the cavity to anchor a permanent filling, and fill at once. Would it be best to fill the entire cavity with cement and leave it for a few months? I think not, for the patient would be likely to wait until the tooth ached again before returning. But if I find that there be an exposure of the pulp, I think it best in most cases to apply arsenic and devitalize the pulp and properly fill the roots.

I have tried many methods of capping exposed pulps, tried carefully, and conscientiously too, and my experience has been anything but satisfactory. No doubt in some instances I have succeeded in capping an exposed pulp so that it did not die, but have had many a failure, and others of the profession, whose skill and ability are not to be questioned, have had much the same experience as I. Hence I draw the conclusion that the majority of such cases are failures, resulting in pain and annoyance to the patient, and trouble to the dentist, who, if the patient don't leave him and go to some other dentist, finds usually an alveolar abscess, or trouble equally as serious.

None of us would think of saving alive a pulp that had given as the patient expresses it, "real jumping toothache." Nor would we entertain the idea of amputating a portion of the pulp and save the remainder alive. I think failure sooner or later is the result of such an operation; though this tooth may give no trouble for ten years it is no proof that the remaining pulp has not been dead for nine years and ten months.

To sum it all up, I am convinced that greater success lies in devitalizing the exposed pulp and properly filling the roots, than by the conservative treatment.

Now we come to the application of the arsenic. We have had the rubber dam on our patient's tooth all this time, so we won't have to go to the trouble of applying it, and so save valuable time. I prefer to reduce the congestion and inflammation of the pulp before applying the arsenic, as it sometimes causes severe pain; for this I find that carbolic acid and iodoform is very efficient. Dr. Jas. Truman has found that by applying iodoform with the arsenic no pain follows. I forgot to say that a dentist should never apply arsenic without having the dam applied, unless it be

impossible for him to do so, for should any of the arsenic get on any part of the gum, a bad mess would we be in, to say the least. Use the least possible quantity, placing it directly upon the exposed portion of the pulp. Then seal the cavity with Fowler's or Gilbert's temporary stopping; don't use cotton. Then dismiss the patient with instructions to return in 2 or 3 days. At that time the pulp is in the best possible condition for removal. No serious danger would arise if the arsenic should be left in the tooth for a week or more, but the pulp would be more tender, pull apart into little pieces, making the removal more tedious. When the patient returns, again apply the dam, take a sharp bur, about No. 4 or 5, and cut right into the pulp chamber, making quite a large opening and entirely removing the bulbous portion of the pulp in that way; then take a new small size barbed broach, remove the remaining portion from the roots; try to entirely remove the pulp at this sitting. Should I not be successful, I would not apply any more arsenic but wait until another time, when I could, as once is sufficient for that. Too great care can not be taken in the use of this agent.

Now, if I have been successful in removing all this pulp, the next thing to do is to check any bleeding, dry the root canals, wipe them with carbolic acid and fill them at once, for no better time can be had, don't wait for additional treatment. Then I throw this barbed broach away that I have used, and I won't be tempted to use it again. If I have time I fill the crown at this sitting. Having carefully followed out every detail of this operation, I feel confident that this tooth will remain a useful one for many a year without trouble, which I could not be sure of if I had capped the pulp.

Now a word about teeth that are pulpless and have commenced giving trouble. We know that if treatment can be given at once that the trouble can be averted by simply opening the pulp chamber freely and applying a capsicum plaster or iodine and aconite to the gum of the affected tooth. In most cases this will be successful if root treatment be followed up at once. Generally these cases don't come to us until an alveolar abscess is well established. Then relief is not so easily obtained. The treatment best pursued is to assist nature by applying counter-irritants to the gums. Sometimes the pus can be drained out

through the roots, should it begin to burrow through the process. Perhaps the best way would be to make an opening into the abscess by drilling through the process, not waiting for an opening to come of itself. At any rate, when the pus does discharge relief always comes. Frequently the suffering is intense at this time. When drainage of the pus is established, do nothing to stop the free flow, rather assist. Dismiss the patient, with instructions to return in a few days. By that time the flow of pus has stopped. Then the treating and filling of the roots is the next thing to do. "Cleanliness is next to Godliness" applies in this case admirably. Apply the dam, dry cavity and root canal, remove all débris possible with excavators or such other instruments as suit best. Then I wash root canal with alcohol, as this cuts all substances of a greasy nature. Carefully wipe dry. Then pump peroxide of hydrogen into the root. Allow it time to thoroughly permeate the tooth, root canal and all. Then dry and apply bichloride of mercury (the one in one thousand solution), in much the same manner that the peroxide of hydrogen was applied. Dry this out and lastly wipe the root with carbolic acid—though this last may not be necessary. After all this has been done I am pretty sure that the root is in as good condition for immediate filling as it ever will be. Why not fill it at once? Six months' treatment won't make it any better. I know of cases that had been treated for a year; in that time had had several abscesses with the usual swelled head. The case I treated once and filled the roots, gave no trouble at all. I don't go much on the smell; that is, I would not treat a tooth and judge of its fitness for filling by the smell of the cotton I pulled out of the root, especially after being in four or five days and nothing but cotton in the tooth cavity. For root filling I use chloro-percha and gutta-percha cones, which are sold by the dental depots. This material is the best, in my opinion. I trust no one tries to fill roots nowadays with gold or tin, for the gutta-percha is so much superior. Simply place a drop of the chloro-percha in the cavity with a smooth broach. Work the liquid into the roots. Capillary attraction will be found to help the chloro-percha into the roots. Then take a gutta-percha cone and push it into the root. This will probably fill a root as perfectly as it can be done. I have found roots of some teeth impossible to fill—some so small that the finest broach

will not enter. These I let alone; they will probably never give any trouble. The anterior roots of the inferior molars and the buccal roots of the superior molars are the most difficult. I do the best I can, but I hardly think that those roots mentioned are in every case perfectly filled.

If this paper should mislead any one I shall be sorry. I have tried my best to tell you what my method has been, that has proved successful for me.

OILS.*

BY A. W. HARLAN, M. D., D. D. S., CHICAGO, ILL.

None of the fixed oils are used as local medicaments in the teeth or mouth. Lard or lard oil and wool-fat enter into local applications for the skin, when it is desired to apply remedies to be absorbed by that method. Oils have long been used as domestic remedies for the relief of toothache. The oils so used have been cinnamon, wintergreen, cloves, peppermint, cajeput, thyme, sassafras, turpentine, and a few others. Dentists generally, for many years, have relied on other substances to allay pain, although occasionally combining one or another of the above with creosote, carbolic acid or chloroform. It is only in recent years that eucalyptus has been used as a solvent for gutta-percha or iodoform or iodol. Some years ago, at a meeting of the American Dental Association, Dr. J. Foster Flagg and the late Dr. E. Osmond, of Cincinnati, engaged in a spirited debate on the light and heavy oils of cloves. The late Dr. H. L. Sage, of Bridgeport, Conn., was an enthusiastic believer in carvacrol, which is obtained from oil of caraway, but it seems to be lost to sight now. It was from his reports on the above and the debate spoken of, that I was induced to engage in a clinical investigation of essential oils about 1880. From that time to the present I have experimented with about forty or fifty essential oils and their derivatives. From these experiments, in the laboratory and in private practice, I conclude that the essential oils are valuable agents in dental practice. They are generally pleasant to the smell and taste, and are not irritating to the soft parts or destructive to them when accidentally brought in contact with them. The essential

*Read before the Northern Illinois Dental Society.

oils are generally absorbers of oxygen; they are volatile, and some of them (as peppermint, cajeput, caraway, mustard and turpentine) are very useful obtundents of sensitive dentine. Moreover, a few of the above and others spoken of, are disinfectants, in the truest sense, destroyers of microbes and their spores. This has been proven in experiments conducted in Chicago. These oils are not miscible with water, hence when they are used as a root dressing they are not dissipated or contaminated by the saliva or mixed fluids of the mouth. They are capable, as I have already pointed out,* of depositing vaporizable camphors that are powerful disinfectants. These camphors are soluble at a temperature below body heat. They are good menstrua for the iodine compounds, when it is desirable to use such compounds in local medication. If oily dressings are not tightly sealed in a pulp-chamber, they are not vitiated as all substances are which are soluble in water. This is an important point. If you will consider for a moment that the zinc preparations, carbolic acid, peroxide of hydrogen, bichloride of mercury, aluminum chloride, boracic acid, aseptol, resorcin, and nearly all of the coal tar derivatives are more or less soluble in water, you will see at once that oleaginous preparations, whether used as a dressing between the gums and roots of the teeth, or in the teeth themselves, whether alive or pulpless, possess this advantage over the former, in their sparing solubility under such circumstances. They may be allowed to remain for longer periods of time in roots of teeth when it is not possible to fill them at once for any reason. If an oily dressing is applied in a root of a tooth, after the removal of a pulp by heroic measures, or after its destruction by arsenic, it is a soother, an anodyne effect is produced, mephitic gases do not form in their presence. They will slowly but certainly disinfect an infected root or the dentine of a tooth, and not injure or impair the efficiency of the cementum or pericementum. They may be pumped through roots and fistulous tracts with impunity. If a non-toxic or non-irritating oil is used and is accidentally forced through the root into a blind abscess, it does not produce the same disturbance that a coagulator does. They will not clog delicate canals. They are cleanly to use. They may be combined in various ways to promote their efficiency or

* See DENTAL REVIEW, January, 1888.

produce agreeable smelling and tasting compounds. They are destroyers of disagreeable odors of other drugs and of both phosphoretted and sulphuretted hydrogen. They are to be used as solvents for the camphors or all crystalline bodies terminating in "ol." They are indispensable to me in private practice in the conditions previously mentioned, and when heated and applied to cavities in living teeth they often succeed as obtunders when other and more vaunted remedies fail. An intelligent use and fair trial of them, always procuring a good quality, will prove to you their value in operative dental surgery.

GOLD FILLINGS AND OTHER THINGS.*

BY DR. G. W. DENNIS, LA SALLE, ILL.

Filling teeth with gold has probably received more thought than any other one matter connected with the practice of dentistry. So much has been written upon the subject that little has been left unsaid, but as there seems to be a tendency among many of our professional brethren of late to undervalue and with some to abandon this old, reliable filling material, let us consider the advisability and soundness of the course.

In comparing it with other materials for the preservation of decayed teeth several things are to be taken into consideration: What is its past history, has it been a success as a filling? Can it be inserted without undue loss of time? What are the requisite properties of gold for this purpose? How can the number of failures be diminished?

Regarding its past history, we are impressed with the belief that gold has stood the friend of dentist and patient for many years, proving the most reliable article for saving decayed teeth that has ever been placed in the reach of the profession. From the old soft foil to the present many excellent preparations now in use, fillings have been uniformly made by really careful and competent operators that could not be excelled in durability and utility by any other material whatsoever. This is a fact easily proven by a glance at the mouths of thousands of our fellow citizens. It stands, then, a matter of living record that, properly manipulated, it will form a perfect stopping. What then can be the

*Read before the Northern Illinois Dental Society.

objection to its use? for, judging by many signs and sounds, there are some who have loved that now distrust or abandon it; one cause is said to be the time required for its insertion. After the advent of cohesive gold many dentists carried restoring and contouring to such excess, and became such tedious operators that a revulsion came which resulted with many in abandoning gold and resorting to plastics. One noted eastern dentist, after inventing many useful appliances and becoming so expert as to declare that "it was a waste of time to consume over 45 minutes in packing a book of foil," finally, unable to satisfy his boundless desire for haste, has (it is said) ceased almost entirely the use of gold and has become a standard authority on amalgam. This is not for want of ability to manipulate gold, but the result of the present rage for rapid operating. While I have no more desire than others for the needless prolongation of operations and appreciate fully the value of time, I can not sympathize with the desire for annihilating time to an extent that proves fatal to the successful use of our best and most sightly filling material. So long as no method of preparing a form easier of manipulation and more rapidity of insertion has been discovered, let us do our best with those now within reach. The most desirable qualities wished for are: Softness, sufficient cohesiveness and a plastic nature that will admit of rapid insertion. Of late a demand has been made for a gold combining the above advantages. Several preparations have been put upon the market, but, judging from a rather limited experience, they fail utterly to answer the purpose for which they were intended. A noted foreign dentist has written a book extolling the virtues of a plastic gold manufactured in Europe, and in a portion of the work translated and published in the August number of the *Chicago DENTAL REVIEW*, he claims such wonderful qualities for it that he was able to insert a filling which consumed an amount of gold almost equal to a book of foil in the incredibly short space of fourteen minutes. Would not most of us consider that very rapid work with amalgam? But in the same article a confession is made which throws us somewhat in doubt as to whether such rapid operations are best. He says that a filling was inserted in the mouth of his son, where we would expect operations fully equal to his average performance, which failed in the short space of one year. May we not confi-

dently look for him as a recruit for the amalgam ranks ere long. There seems to be some obstacle, never yet overcome, that stands in the way of preparing a plastic gold that will in all respects make a perfect filling. The margins crumble and more care is necessary in inserting and finishing the latter portion of such fillings than would be necessary with foil. But even if a good filling could be made, it would be but a doubtful blessing to humanity. As the difficulty now existing in the use of present forms has driven many an aspiring "tooth carpenter" from the field in despair, his innumerable failures having destroyed the confidence of his victims, the tendency would probably be to encourage slovenly operations and seeming success would enable the worst classes of quacks to extend their opportunities for doing evil. But plastic gold has been manufactured that can be used in conjunction with foil to great advantage in saving time. For this, Morgan's plastic would seem to answer every purpose. It can be inserted very rapidly and is easily condensed, and remains in position almost like wax, even in saucer-shaped cavities, where retaining points are dispensed with. Certainly, non-cohesive gold can not be manipulated with more rapidity. But to obtain the best results it is necessary to finish with another form for making perfect margins, where contouring extensively is not desired, there can be no objection to semi-cohesive foil. The soft, velvety qualities, with just enough cohesion when very slightly annealed, render it peculiarly adapted for the purpose, and the minimum of force required to pack against frail walls is greatly in its favor. A great mistake is made in pounding gold against cavity margins till the metal rebounds. In ordinary medium sized cavities a suitable foot plugger should first be used to press the gold into place against the walls and margins until a sufficient thickness be obtained to protect them, then malleting can be used with judicious force, but should cease when the gold is packed. If properly done, good tight protective margins can be made over walls no thicker than the paper upon which this is written.

If contouring is desired, anneal more thoroughly as the orifice of the cavity is reached, and finish with heavy extra cohesive foil. In this part of the work I would use a foot-plugger of proper size and deep, sharp serrations to drive the freshly added ribbons into the preceding piece, then with another having shal-

low, rather coarse serrations, level the surface, and batter the holes made by the preceding instrument full, clinching the minute fragments together into an adamantine mass. Coarse polishing strips are to be avoided, as they are liable to pit or flake the margins.

I fancy, if many of our handsome fillings were put under the microscope the result would be startling. That valuable instrument, the burnisher, seems to be neglected of late years. If margins are only packed flush, burnishing, with very little additional work, will probably make a finish more valuable to the tooth than any other. However, we don't any of us do that way. It would be too old fashioned. But in view of what seems to be a fact, that the fillings of many prominent operators are not of as enduring a character as those from the same source of a decade since, would it not be well, occasionally, to give a thought to the minutiae of our work? More soft or semi-soft gold, more careful packing of margins, a desire to excel in quality instead of rapidity of performance, a determination that nothing shall leave our hands that is not just as perfect as we can make it, and we will have less cause to find fault with the material. Excellence can only be attained by *never* allowing ourselves to slight an operation, and it is due to your patient, too, that you do so, for he who fails in this not only abuses his confidence, but robs him as surely as though he takes his purse. But no matter how earnest our efforts, nor how much we love and confide in the noble friend of which we have been speaking, occasions will arrive, when from economy or some other reason, we deem it best to use other filling material, and for very frail teeth, those apparently almost impossible to save by ordinary means, a combination of amalgam and cement seems (to those acquainted with its merits) to be very efficacious. Let us imagine a large cavity in an upper bicuspid, with walls thin, soft and crumbling at the slightest touch of the instrument, and to add to the difficulty of the case, the cavity filled with an abnormal growth of gum tissue. This being very sensitive to the touch, we apply a pledget of cotton saturated with a 6 per cent. solution of cocaine, and by the time our dam is ready and other preparations complete, we can excise without pain. The dam being adjusted the softened dentine is carefully removed, cutting towards the walls for fear of going too deep,

and leaving sufficient to protect the pulp. The cavity is now well dried with hot air, bathed with a suitable antiseptic and dried again, varnished and a thin flooring of oxy-chloride cement applied, having previously dusted the bottom of the cavity with the dry power to take up any surplus chloride. This again is soon dried with hot air, and we mix a proper amount of amalgam, containing from 6 to 10 per cent. of copper, a portion is pressed dry and packed against the cervical wall, and another portion is incorporated with oxyphosphate, mixed rather thinner than usual, equal parts of each being used, pressed into the cavity so as to fill close to the margins, and a veneering of amalgam rubbed over the whole surface. The cement adhering to the walls and the amalgam that has been mixed with it combining with the outer coating, the whole is held firmly against the cavity margins so that shrinkage or leakage would seem impossible, and if the work has been done with promptness so that the outer coating is applied before the combined portion hardens, the union will be as complete and perfect as if no cement were present. A very reliable filling can be made without the outer coating of amalgam.

I wish briefly to present a plan for attaching porcelain crowns to the anterior teeth. It may not have even the slightest claim to originality, but if there be any merit at all in the idea, I hope the members of the society will discuss and point out the weaknesses, as I have had but little practical experience with this method. It is to prepare the root as for a Logan crown; insert a tube which is to project about 1-16 of an inch above the orifice of the root canal when the tooth is fitted, so that appearance and occlusion are assured, the tube can be slipped on the post of the crown, and thin cement having been placed in the root, it is pressed to position and held there an instant until the cement is slightly set. The crown then being removed and cement trimmed away from the end of the root sufficiently to allow of gutta percha softened with chloroform being packed in around the tube to protect the root from decay, the crown is then quickly pressed home (the cement having first been placed within the tube), then the gutta-percha is trimmed so as to make a smooth joint. Thus the cement in root and tube is protected and should last indefinitely, and crown, post, tube and root being cemented together a strong operation is assured.

PROCEEDINGS OF SOCIETIES.

ABSTRACTS OF SOME OF THE PAPERS READ BEFORE THE OHIO STATE DENTAL SOCIETY, CINCINNATI, OCT. 16, 17 AND 18, 1888.

MEDICAL EDUCATION FOR DENTISTS.*

By C. M. WRIGHT, D.D.S., M.D., CINCINNATI, O.

The education of a dentist, or rather education for dentistry, will not be fixed until the "cohesive or non-cohesive gold" question and the "amalgam" question are fixed, and these of course we shall always have with us.

The fact that busy and prominent practitioners of medicine and dentistry, who are not often professors in medical or dental colleges, or editors of medical or dental periodicals, are so much interested in the education, or proper preparation of those who are destined to occupy the shoes of the present race of practitioners, must have some reason. There must be some grounds for the discontent with past and present methods of education. What are these grounds? Why is Dr. A., B. and C., who have been successful in gaining professional favor, professional honors, and large practices not contented to let the coming doctor and dentist work out his own salvation in the same way that they themselves have? It can not be that Dr. A., B. and C. are possessed with the foolish idea "now that we are in, we must make it as difficult as possible for others to get in." It can not be that Dr. A., B. and C., who have done so nobly in all other respects, can have any but the purest motives in this direction. They are doing what they consider a duty, and this duty lies at present in trying to make the fence about the dental field higher and higher, and in some cases adding a barbed wire at the top of the fence. Why this should have become a duty I can not answer. When the distinguished Drs. A., B. and C. entered the profession, the fences were so low that they could be stepped over with the greatest of ease, and no thoughts of the danger of rents and tears from the abominable barbed wire ever entered the intruder's mind.

To be sincere, the fence was a very low one when I entered the profession. The requirements were a two years' apprentice-

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ship or studentship and a course in a dental college. For several years the mechanics of our practice occupied my best thoughts. I don't think I looked or thought of anything beyond the *how* to do it, in daily practice. The *how* is just as important to-day as it was a quarter of a century ago. Clinical experience seemed to me the very first thing of value, and to acquire that required all the energy and devotion possible. It is to-day as valuable and as difficult to acquire as at any past time in our history. Cultivation of the muscles, so that they shall respond delicately, skillfully, and accurately to efferent impulses from a trained mind, is of the first importance in our specialty. Will a medical education train the mind for this sort of work? I should say "not particularly." The particular study which the dental student needs is exactly that which the best class of dental colleges of to-day offer with their two courses of lectures on anatomy, chemistry, materia medica, physiology, pathology, general and special, and therapeutics, and their present facilities for and encouragement of diligent laboratory and infirmary practice. This is all that the beginner needs. Nothing more, nothing less. It is the education *par excellence* for the preparation of young men who propose to enter the field of dental practice. It is practical. We hug ourselves on account of the reputation our *young* specialty has gained in the world. The dental college is the prime factor in the good reputation. The dental college standing alone and independent of any medical faculty. The American Dental College, which has become an institution, in the broader meaning of that term, in our country and only in our country. This is the school for the dental student. It isn't the school for medical, or law, or theological students. Neither are medical, or law, or theological schools the place for dental students.

But the science of dentistry we say, is a branch of the science of medicine. Medicine is the *alma mater* of dentistry as well as of ophthalmology, gynecology, etc., etc. This is all true, but when you go on to say after stating the above proposition, "therefore the dentist, like the oculist, should study medicine first and dentistry afterwards," I object positively and insist that the conclusion has no logical connection with the accepted proposition. Anatomy is a branch of the science of biology. Would it not be better for a young man who expects to become a practical anatomo-

mist to begin with dissections and the study of anatomy proper than for him to spend a year or two in the study of biology? After the technique has been acquired and skill with the scalpel, how natural it is for the student of anatomy to extend his studies and reach back into the interesting science of biology. I wish to insist that the study of medicine becomes a desire, a pleasure, a necessity to the dentist *after* the course in the dental college and after manual skill has been attained in the infirmary and in practice. Dental graduates are continually supplementing their dental studies by later medical studies. Medical education for *dentists* is of the greatest advantage. Medical education for dentists is becoming every day a greater necessity. We must all approve of it. But I want to make the distinction as clear as the line between black and white, that medical education for *dental students* is as unnecessary and as unprofitable as the study of theology would be to a law student.

The dentist, among all specialists, is the only one who has a special school devoted to this necessary training. The school has proved a success.

The fruit of the American Dental College has made American dentistry pre-eminent in the world. If you will show me one very prominent and distinguished practitioner of dentistry who has come to us from the medical schools, I will show you ten equally as prominent and distinguished who have come from the dental schools. Dr. Norman Kingsley looked into this subject some years ago and stated some significant facts in regard to it. How many members of this society have received a medical college education first and our dental education afterwards? I suspect a straw vote would show a very insignificant minority of the former. Why then, gentlemen, do Drs. A., B. and C. want to change the methods of the dental college, or attach dental *chairs* to medical college faculties. These dental *chairs*, so-called, have always seemed to me to bear about the same relation to a chair in an independent dental school, that a little wicker work child's chair with a hole in the bottom, does to a comfortable adult arm chair. Our profession is too old for the little chair now. Let's put it away in the garret and stick manfully to our dental schools and the chairs filled by professors of the science and art of dentistry.

DISINTEGRATION AT THE CERVICAL BORDER.*

By L. P. BETHEL, D.D.S., TOLEDO, OHIO.

It is a fact well known to most, if not all of the profession, that failures of proximal fillings are, in the majority of cases, due to disintegration at the cervical border.

Among the more important theories advanced to explain those failures are imperfect preparation of cavities; imperfect manipulation of the filling material at the cervical wall; the injudicious use of the mallet, particularly the hand mallet; the imperfect finishing of fillings at the cervical borders, and others. It can not truthfully be denied that if a frail wall is left at the cervical border, or in fact any defective manipulation as above stated, becomes a predisposing cause to the destructive influence of decay producing agents, yet, with all due care in these and other things we are often unable to satisfactorily explain the cause of disintegration.

From all accounts, more trouble of this kind has been experienced since amalgams and cohesive gold have been so generally adopted as filling materials, and this has led to the inquiry if attending circumstances may not be the cause of a physiological action, that, *at times*, becomes the predisposing cause of decay at the cervical border, namely, *absorption*.

These failures occur mostly where the decay has burrowed high on the tooth, and especially where the gum has receded. The cervical border in these cases is formed where the enamel is often thin and defective, or extends quite into the cement substance overlapping the enamel.

Cementum is analogous to bone in composition and density. Dentine differs from cement, practically, in that it contains about 5% more phosphate of lime, which renders it harder as well as reduces the proportion of organic matter. Enamel is much harder and denser than either, and thus less easily penetrated. Having briefly considered the character of the substances forming the cervical wall in this location, let us turn our attention now to the filling materials.

It seems to be difficult to get an amalgam that will not change its shape after insertion in the cavity. As inserted, amalgams seem generally to either contract or expand upon hardening. As

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a result of contraction there is a pulling away of the material from the walls of the cavity, and the decay-producing agents find a lodging place here, and their destructive influence is manifested. On the other hand, expansion of the amalgam must cause lateral pressure against the walls of the cavity, and this continued pressure may become an irritant. Cohesive gold, when heated, becomes harsh and unyielding, and when malleted against the walls of the cavity, is liable to form an uneven surface, and when solidly wedged in this position may become a slight irritant by means of pressure.

Nature in both cases will then be called upon to take some course of action. First, we may reason that she will relieve the pressure, and this perhaps by absorption.

In case absorption does ensue, where will it first manifest itself? Naturally at the most vulnerable point, in this case the cervical border, as it contains more organic matter and is less dense than the enamel. If the absorptive process begins it may, and often does, proceed quite beyond, just enough to relieve the pressure, and in this case may cause a breach.

It is true that Nature reacts in cases of absorption and fills the breach with cementum, unless some intervening substance interferes. If the absorptive process has been carried to such an extent that the oral fluids are admitted into the breach, then Nature is called upon to protect herself from these and makes the deposit short of the breach, and thus we get a condition that greatly favors disintegration and caries.

On the other hand we notice few failures at the cervical border where non-cohesive gold, tin, or tin and gold combined, are judiciously used as a filling material. If the absorptive theory, as here presented, proves true, then we may conclude that fewer failures occur from these materials because they are soft and yielding, conforming readily to the walls of the cavity, and on this account do not cause pressure after insertion.

THE OTTOLENGUI METHOD OF ANÆSTHETIZING SENSITIVE DENTINE.*

BY LEVITT E. CUSTER, B.S., D.D.S., DAYTON, OHIO.

Dr. B. A. R. Ottolengui, a young practitioner, baffled in his attempts to satisfactorily obtund sensitive dentine by ordinary

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methods, has, according to his own statements, followed a course of logical reasoning to a triumphant end. Out of over one hundred operations he records no failure, and Atkinson says it is our own fault if we have not tried a method of such statistics.

The author of the method uses the term anæsthetize in preference to the old term obtund, on account of the complete freedom from pain brought about; and since he claims absolute success in every case, let us examine the theory and the action of the different agents employed.

The object is first to withdraw the water from the dentinal canaliculi, leaving a beaded fibril which will not completely fill the tubule, then anæsthetize the fibril. For the former purpose he uses hot air, and for the latter, sulphuric ether. He proceeds in the following manner which I give in his own words: "Isolate the tooth and one or two others on each side of it with rubber dam. After using bibulous paper, apply dry heat, not too hot, with the chip blower. These blasts should be continued until the whole tooth becomes whitened, which is sufficient evidence of dehydration. Having done this the next step is to anæsthetize the fibre. To do this use the purest ether thrown on with a continuous spray apparatus." This is continued until the patient is quiescent.

In this method we see a combination of two heretofore well known principles—complete desiccation followed by reduction of temperature.

The histological structure of dentine being a tube enclosing a beaded thread of nerve tissue, if we may call it nerve tissue, and the interbeaded spaces filled with a fluid which we suppose to be water, we see the latter to be essential to perfect sensitiveness of dentine in a two-fold manner; but which surrounds and fills the interbeaded spaces of the dentinal fibril, and that which is a constituent of the fibril itself. The water surrounding the fibril is essential in preserving an equilibrium of pressure. One theory of the sensitiveness of dentine is that its tubuli contain only a fluid which alone transmits pressure and sensation to the pulp; but a better theory is that in containing this beaded fibril the fluid is not a continuous column, and in that manner being enclosed in unyielding walls presses upon the fibril itself—not the pulp. So if this be true, you will readily comprehend the ex-

ternal relation of the water to the fibril, which, if withdrawn, will reduce the sensitiveness.

In regard to the relation of water as a constituent of nerve tissue or the dentinal fibril, as one of the conditions for the perfect performance of nerve function there must be moisture, hence the effect of dehydration, and hence its application and reputation as an obtundent for sensitive dentine. By the extraction of water from the tubuli and a portion from the fibril itself by chloride of zinc, alcohol, hot air, or by whatever means employed, the above condition is stricken out, and sensation can not be conveyed. The reader never had success in drawing out the water until experimenting according to the first step of the Ottolengui method, when he found that he had so thoroughly desiccated the dentine and its delicate contents, and it was so nearly devoid of sensibility, that the operation was often painlessly completed without applying the ether spray. Complete desiccation by whatever means to my mind is the most powerful factor in obtunding sensitive dentine, and when used in conjunction with ether spray, is the more effective of the two. I have had very little success at any time with those agents which coagulate albumen.

The second step of the process is simply anæsthesia of the dentinal fibril which is produced by the reducing the temperature by means of the ether spray. Here is a new application of an old method of local anæsthesia—the use of the ether spray for sensitive dentine. Upon cutaneous tissue the numbing power of ether spray is aided by withdrawal of blood and nutrition from the parts, but when applied to the dentinal fibril it is dependent entirely upon the refrigerant quality.

The first and unfailing query arises as to the effect of such extremes upon the pulp. In drying out the dentine it is not understood that the tooth is to be heated at all. Dr. Ottolengui says the blasts may be so regulated that the whole tooth will not become hot, and at the same time the moisture will have been vaporized. My own experience is that, as dentine is a poor conductor, by lengthening the intervals and applying sharp, quick, hot blasts, thorough desiccation might be accomplished without the heat reaching the pulp. Therefore it is not necessary that there be pulp injury from the desiccating process.

The only part admitting of doubt is the reduction of temper-

ature. Now it is not intended that this process be continued until icicles hang from the tooth, but simply to that point where there is a cessation of pain, which, fortunately, is many degrees from the freezing point. The pulp is not frozen at all; it and its nerve endings have simply been reduced in temperature until, according to a former argument, they can not receive or transmit pain to the censorium. Dr. Ottolengui thinks the fibrilæ alone are anæsthetized, but I am of the opinion from the very limited duration of anæsthesia, that the pulp also largely shares the numbing influence. I find as soon as warmth returns by ingress of warm blood and by conduction, sensation is also restored, proving that actual freezing had not taken place, and hence no injury of pulp tissue. Doubtless if this operation were often repeated a chronic lesion of the pulp would set in, which would lead to its destruction; but for a single or a second operation I can see no objection. The author says he has seen no outward ill results so far. In my own limited experience I have seen no bad effects.

Dr. Ottolengui found the application of the ether spray to be painful in about forty per cent. of cases, but in my hands it has been more or less painful in all, but of such a character that the patient would always prefer it, rather than the pain of cutting without its use. The pain is most severe at the beginning, but it gradually lessens until at the end of from one to one and one-half minutes it has entirely subsided.

As to the effectiveness of this method of obtunding sensitive dentine, I would say that while it is not the ideal method, after having tried nearly every one known, in my hands it is the only one that will produce complete anæsthesia of dentine.

The Ottolengui method of anæsthetizing sensitive dentine by virtue of at least the one moment of complete anæsthesia which it produces, is valuable and for that one long desired virtue is to be recognized as one of the best methods for obtunding sensitive dentine and allaying the terror so commonly associated with the term dentist.

Discussion on Dr. Custer's paper:

Dr. Berry said: Rapid breathing is a very good anæsthetic. We are indebted to Dr. Bonwill for this important discovery. If the patient can be induced to breathe rapidly for one minute he

will be so anæsthetized that a sensitive cavity in a tooth may be excavated without pain.

Dr. H. A. Smith remarked: The treatment of sensitive dentine is an interesting subject. If the process (referred to by Dr. Arnold), is that of refrigeration, we must remember the tooth can not stand the sudden change of temperature without causing disturbance of the pulp. If a pulp has been subjected to irritation in any degree, before we begin to operate, then repeated shocks as described would most likely convey it past the point where it would recover its physiological state. I can hardly believe the anæsthetic properties of chloroform or ether are beneficial as described in this manner. Heat, no matter how used, will effect a change in the organic tissues of dentine, it is changed physically and fails to respond to injury. The rational treatment of hypersensitive dentine is to exclude irritants and give the tissues rest. Healthy dentine is frequently exquisitely sensitive, and the obtunding agents to meet all these conditions have yet to be discovered.

Dr. Taft thought: The treatment as indicated by Dr. Custer would be liable to work injury; it is too energetic, and might produce periosteal irritation. There is a liability of injuring the pulp of the tooth to an extent as not to recover upon the return of the normal temperature. Some very broad claims are made for the use of heat alone. The method of treatment is reasonable in most instances; perhaps will be effectual in all instances if pursued to a sufficient extent. Heated air, frequently applied during excavating, usually makes the operation quite bearable. Ether spray is of little value in ordinary cases. After excavation has been completed and thorough desiccation, a solution of cocaine or heated carbolic acid may be used with good effect. To prevent a recurrence of the sensitiveness after the filling has been completed, a solution or varnish of gum mastic or copal may be applied to the walls of the cavity.

Dr. Arnold said: I have never used this remedy and never advocated its use. It has not been satisfactory with dentists. Sometimes I use chloroform and ether. Nervous patients, and hysterical ones especially, have to be treated carefully. Extreme temperature, I believe, would impair the tissue to an extent as to cause after trouble in the pulp.

Dr. Bell believed: The treatment of sensitive dentine is important for us to understand. Alcohol is a useful article in our practice. I apply it in a different way from the ordinary manner. I apply with cotton and then use the hot spray. In extreme cases make an application of peppermint and then use the hot blast two or three times, or sufficient to remove the moisture. It is policy to use a non-conductor between the filling and dentine.

Dr. Wright said: What would be a success with Dr. Custer in my hands would be a failure. We have been talking about dentine and anæsthetic agents ever since I can remember, and I think, with all our desire and determination, we will be able to get something that will reduce pain. We are not any nearer to it now than we were twenty-five years ago. The pain is in a nerve center and we must rely upon such anæsthetics as chloroform and ether to reduce it; for the present we have no reliable local anæsthetic that will do away with this pain.

Dr. Wilson further said: Caution should be observed in the use of hot air or warm air, for the reason that in many respects we are producing more pain than we are relieving, unless carefully applied.

Dr. Smith speaking again: We work and cut upon tissue unlike any other in the human body. It is the character and nature of the affection which has not been settled. The general opinion has been that the injury is first upon the dentinal fiber itself. It may be, however, directly upon the pulp. In the latter case obtundents would be valueless. Dr. Wright is correct in what he proposes, that we must put the nervous system to sleep before we can treat the patient.

Dr. Wright: Dr. Smith refers to the tissue being different from any other, and this is why we can not apply local anæsthetics.

Dr. Taft observed: I can hardly agree with Dr. Wright in his statement that we have been working twenty-five years and no advancement has been made on this subject; my own experience will not allow unchallenged a statement of that kind. I know, as every operator present does, that he manages his cases better now than he did that number of years ago; we are making progress in this particular, as well as in other things. In this particular matter you do not need air as hot as it can be made. The air should

be so regulated in temperature and rapidity of the current that little or no pain is experienced by the patient.

A full description of Dr. Guilford's apparatus (who has been giving special attention to this subject) is given in the Transactions of the Ninth International Medical Congress, vol. V., page 472. In the use of the ether spray the temperature is reduced and in this way the sensitiveness is lessened.

Dr. Robinson in closing: In the practice of drying a cavity I have a very inexpensive apparatus that works well. I have a little globe cylinder, and on each side there is a little point running out, to which I attach a little rubber tube; on one end is attached a rubber ball and on the other is a little mouthpiece something like a very fine blow-pipe jet. I heat the cylinder very hot and use the bulb with one hand and place the tube over the cavity with the other; I can get any desired heat I wish. I study to save my patients as much pain as possible while operating, and I have found nothing of any consequence except to warm the cavity as much as I think it ought to be without producing pain. I then excavate a little and repeat the treatment in this manner until the operation is completed. There is a condition in which were we to use a dry cavity there is more sensitiveness than when it is moist; and it requires good judgment to know when to dry a cavity and when to let it remain moist. The only question for us to decide is how best to excavate a cavity and with as little pain as possible.

PERICEMENTITIS.*

By F. S. MAXWELL, D.D.S., STEUBENVILLE, O.

Pericementitis is inflammation of the membrane associating the root of a tooth with its alveolus.

The peridental membrane—the remains of the cemental pulp—is called the “mother of the cementum,” and the cementum being developed from the periosteum, it therefore in after life receives its nourishment from it.

The cementum of the root is supplied with nutrient material from the peridental membrane, hence if *some* of this blood and nerve supply is cut off the cementum does not suffer for want of nourishment. One of the most important offices of the peridental membrane is its sense of touch.

*Read before the Ohio State Dental Society, Cincinnati, October 16, 1888.

The enamel of the tooth has no such sense and the pulp only conveys painful impressions, hence every touch upon the tooth *must* be reported by its peridental membrane. Its value is therefore apparent, but like every other part of the human body it is subject to disease. Pericementitis *proper* has its seat in the apical space, following the death of the pulp, immediately preceding alveolar abscess, and is the beginning of the most painful affection to which the teeth are liable. It *seldom* occurs during the life of the pulp, being augmented by the escape of poisonous gases through the apical foramen and into the surrounding tissues. Pericementitis may exist under two forms, acute, or apical pericementitis becoming chronic in character, and those cases having their origin at the gingival border, *some* of which are *constitutional* and chronic in form, the acute, or apical form, always occurring from a diseased pulp. By far the greater number of cases come under the acute form, and the most frequent of these is *apical* or *true pericementitis*. This always begins in the apical space and near the apical foramen. "It is safe to state that no tooth with an empty pulp-chamber is safe from apical pericementitis."

The symptoms of the disease vary considerably, but it usually manifests itself by a dull and sometimes throbbing pain about the affected tooth. This is at first relieved by pressure upon the tooth, but as inflammation increases, pressure produces extreme pain, and inflammation elevates the tooth in its socket. The gum becomes red, changing to a purplish hue, the pain becomes continuous and more violent, and an abscess may be established in from one to five days.

It is not very difficult to diagnose a case of acute apical pericementitis. Pain caused by pressure upon the tooth is a symptom distinguishing it from hyperæmia. In diseases of the pulp the affected organ does not become tender to the touch until the inflammation has passed through the foramen, and the patient is uncertain as to exact location. In apical pericementitis the pain is definitely located and the tooth is *not* subject to thermal changes, the reverse in diseased pulp. Having diagnosed our case, the first thing to do to obtain relief is to gain free access to the root canals, and cleanse with suitable instruments. Then saturate the cavity (after having first applied the rubber dam) with some good non-irritating disinfectant—*not creosote*—carbolic

acid and iodoform will do. After thoroughly disinfecting, the pulp chamber should be loosely filled with cotton containing some antiseptic dressing, and the cavity sealed temporarily. Usually the pain subsides within three or four hours, but occasionally will continue, in event of which counter irritation is necessary, which can be best made by means of chloroform applied directly over the end of the root, or better still, by capsicum plasters. In all cases a brisk saline cathartic is beneficial. Heroic treatment, consisting of making an external opening over the apical space, is sometimes resorted to, but this is seldom necessary. Chronic apical pericementitis has all the characteristics of the acute in a modified form, excepting that the pain is intermittent.

Diseases of the peridental membrane having their beginning at the gingival or gum margin have been very fully described in past years. Dr. Black classifies those diseases of the periodontium as gingival, calcic and phagedenic pericementitis. The gingival are for the most part subject to the patient's general health, and are, therefore, constitutional in character, being caused by poisonous substances circulating in the blood and having an affinity for the gingival organ. We have mercurial gingivitis and gingivitis caused by typhoid fever, scurvy and other skin diseases. Simple gingivitis is but the starting point of grave diseases, the swollen condition of the gums being a receptacle for calculus. Calcic pericementitis is caused by deposits of calculus on the necks of the teeth. It is certainly a serious trouble and causes, perhaps the loss of as many teeth as caries.

There are two varieties of deposit depending upon the location. One, the serumal, derived from the serum, and is always deposited *under* the gum; the other, the salivary, from the saliva, and is found on the necks of the teeth but *not beneath* the gum. When a slight serumal deposit has taken place it becomes an irritant, and, though it may remain in position a considerable length of time before trouble ensues, it eventually destroys the peridental membrane. The most aggravating part of the disease is that it may go to the end of the root before its presence becomes known, the gum not receding with the alveolar wall and peridental membrane. This condition distinguishes it from phagedenic pericementitis, in which the membrane is destroyed at the *end*, but clings to the *sides* of the root. The teeth in this condi-

tion are, in reality, lost. The deposit of salivary calculus manifests itself in much the same manner as those just described, excepting that it is more pronounced in the neighborhood of the ducts of the salivary glands. Its effect upon the peridental membrane, however, is not so fatal as the serumal, unless completely encircling the tooth, when the tendency is to accumulate more rapidly and the continuance of accumulation brings evil results. The peridental membrane, happily, when free from irritation, heals rapidly, and it is to this recuperation that makes the operations of replantation, transplantation, and implantation successful, providing the disease has not previously destroyed the peridental membrane. The treatment for calcic inflammation of the peridental membrane is a removal of the cause, and *thoroughness* in so doing, an operation sometimes very difficult to accomplish. The leaving of the smallest portion of deposit is but a flame to the fuel, and is as fatal as a portion of decay on the *margin* of a filling.

Suitable instruments are necessary, and in manipulating them the greatest care should be taken not to injure the gum, unless there should be a hypertrophy of that tissue. A speedy recovery should follow the removal of the calculus, unless the case is of long standing, where there has been absorption of the alveolus and a thickening of the peridental membrane. In such cases I have always used a 30 per cent. solution of chloride of zinc *under* the free margin of the gums. Unless micro-organisms are present escharotics should not be used in *after* treatment, but it is always well for a day or two to use carbolic acid in a strong solution. If the gum returns to its normal condition, and the teeth are tight in their sockets, you can feel safe in predicting a cure, but not unless you have these conditions. Phagedenic pericementitis is a disease *of* the peridental membrane. The inflammation is of that peculiar character whereby the death of the membrane precedes that of the alveolus.

Pus forms in *pockets* about the root and the tendency is to progress toward the apex and eventually destroy the entire root membrane, followed by absorption of the alveolar wall in proportion to the advancement of the diseased membrane.

Our results will be more satisfactory if our diagnosis is accurate. In phagedenic pericementitis *pockets*, as a rule, are found

along the roots. The peridental membrane is destroyed much further than the calculus has extended on the root, "and in the final loosening of the tooth it will be found to have been held by a portion of membrane on the sides, the membrane at the apex having been destroyed." The treatment of phagedenic pericementitis calls for certain operations in common with the treatment of calcic inflammations, the first thing in every case being the removal of all deposits from the neck and roots of the tooth, such deposits being generally situated far up under the gum. This calculus, of the serumal variety, must be *thoroughly* removed, and what operation of the oral cavity, to be successful, should not be thorough, as the smallest particle remaining acts as an irritant. Phagedenic, unlike calcic inflammation, does not end with the removal of the calculus. Where there is a rapid destruction of the tissues, including the peridental membrane and the alveolus, it is better to cut away with a sharp excavator sufficient to obtain solid, or healthy, surface, or until the bone is felt to be firm and resistant. In this case, as in all others, great care should be taken not to injure the gingival margin, the injury sustained further toward the apex is of no importance, comparatively, but if this gum margin is injured sufficiently to cause a slough our efforts to heal the peridental membrane will be defeated. After the operation, the gum should lie closer to the neck of the tooth than before beginning, acting as a barrier to the saliva and exclusion of micro-organisms. If there are no thickened or roughened margins to interfere with the contact of the parts, medication may begin at once. The pocket should be thoroughly washed with peroxide of hydrogen, as an antiseptic, after first removing the débris, and a little bichloride of mercury may be added if so desired. These can best be injected by a Dunn syringe, and the treatment continued with chloride of zinc, as an astringent, for a time or two. Follow this with an application of oil of cinnamon two parts, to one of carbolic acid as a stimulant, to be repeated once every three or four days. Dr. Harlan recommends a solution of iodoform and eucalyptus, or iodoform and cinnamon, either of which is a good stimulant and antiseptic, and should be packed into the pockets, not injected. In the after treatment care should be taken not to injure the granulations, as the parts do not heal by first intention. The mouth should be rinsed frequently with a slightly diluted listerine wash.

AMERICAN AND SOUTHERN DENTAL ASSOCIATIONS.

JOINT MEETING, HELD AT LOUISVILLE, KY., AUGUST 28, 29, 30 AND 31.

[Continued from Page 602.]

FRIDAY, AUGUST 31—MORNING SESSION.

DR. WM. H. ATKINSON called attention to the judicious employment of peroxide of hydrogen, because it causes considerable pain when entering a channel or cavity.

DR. FRANK ABBOTT expressed his opinion in regard to the form of attachment of implanted teeth. He held that a part of substance of the implanted tooth was removed, causing what have been designated the bay-shaped excavations. In these excavations an osseous deposit takes place, and thus the tooth is held firmly. If the removal of tooth-substance continues, the implanted tooth is lost, from what is then termed, the absorption of the root.

DR. B. H. CATCHING mentioned a case where it was impossible to extract an implanted tooth.

DR. J. TAFT agreed with Dr. Abbott in his opinion as to the attachment of implanted teeth, believing that the membrane on the root of the implanted tooth serves the purposes of sponge-grafting.

The report of the joint sections on Prosthetic Dentistry, Metallurgy and Chemistry, was then read by DR. J. ROLLO KNAPP, of New Orleans, La. The report called attention to the series of works published during the year, relating to this section. In the number may be included the American System of Dentistry, Haskell's, Mitchell's, Buxton's, Richardson's, Audrien's, Essig's and Guilford's works. Attention was called to the importance of aluminum and the probable future of the metal in dentistry. The improved method of its preparation for the market has materially lessened its cost. Mention was made of crown and bridge-work, and the favor in which this art has been received in England. Geo. Evans' work on artificial crown and bridgework is a valuable addition to our literature. The dangerous effects of cocaine were mentioned, and he cautioned dentists to use it with a great deal of care.

DR. DAVID GENESE, of Baltimore, Md., then read a paper on the use of dental rubber. He described the manner of mixing

plaster, by adding the plaster-of-paris to the water, until of proper consistency. Models should not be allowed to stand for two days or over before using. No oily substance of any kind should be left on the model as this destroys the rubber, imparting to it an affinity for greasy or oily substances, whose decomposition on the plate is one of the sources of sore mouth. He also described an apparatus, constructed by himself, wherein to soften the wax before opening the flask, and wherein to soften the rubber before packing. He believed that while the use of rubber is very common, not many understand its use perfectly, and but very few persons do use it properly.

The report of the joint sections on Dental Education and Literature was then read by DR. J. TAFT, who reported papers to be read by Drs. Ottofy, Atkinson, Ingersoll and Stubblefield.

DR. LOUIS OTTOFY then read a paper which was originally prepared to be the report of the section of the American Dental Association, which embraces the above mentioned subjects, and of which the following is an abstract :

* * * The number of schools devoted to the special education of dentists has increased from twenty-eight to thirty ; and, by the consolidation of two schools into one, this number has been decreased to twenty-nine ; this being the number of dental colleges now in active operation in the United States. These schools are located in fifteen states and the district of Columbia, as follows :

California - - -	1	Michigan - - -	1
Georgia - - -	1	Minnesota - - -	1
Illinois - - -	4	Missouri - - -	3
Indiana - - -	1	New York - - -	1
Iowa - - -	1	Ohio - - -	1
Kentucky - - -	1	Pennsylvania - - -	3
Maryland - - -	2	Tennessee - - -	3
Massachusetts - -	2	District of Columbia	3

At the twenty-nine schools in active operation there were matriculated for the term of 1887-8, 1,937 students, an increase of 299 over the number of students in 1886-7 ; and at the commencements held since the last meeting of this Association, 746 persons have graduated from the dental colleges of the United States—an increase of 138 over the preceding year and making a total of 1846 graduates for the last three years (1886-7-8).

In eleven of the colleges it is necessary that the student should be engaged in the study of dentistry not less than three years prior to graduation, while there are still eighteen colleges which will confer a degree on students who have attended two "regular sessions" at a dental school, without reference to any period which the student has devoted to the study of dentistry.

The demand for better educated dentists is imperative, and we hope that the schools which do not yet require the student to devote three years to study before graduation, will vie with each other in being the first to accede to the demand. The dental societies of Illinois, Maine, New Jersey, Massachusetts and Connecticut (Valley) have adopted resolutions during the past year favoring the increase of the time which a student should devote to study. Some schools have done even more than this. Three of the twenty-nine colleges require the attendance on three full courses of lectures before graduation.

The section would recommend as a preliminary step to the further and inevitable course which all dental schools will be obliged to pursue, viz: Three full sessions of nine months each; that for the present the colleges increase the course of study to seven months, from September 1st to March 30th each year, and that the regular or long session be followed by a short session extending to May 30th. Attendance at the short session to be compulsory to juniors and optional to seniors.

The subject of establishing post-graduate courses for dentists has engaged the attention of the profession for some time and many able articles recommending them have been published during the last three years. In England and Germany post-graduate courses have been given during the past summer. In the former country at the National Dental College and the Dental Hospital, both of London, and in the latter at the University of Leipzig.

The conception of what a post-graduate course in this country should be is entirely different from what it has been made in Europe. The purposes there are similar to our clinics at dental society meetings, consisting of demonstrations and lectures on dental topics. In our own country it has been purposed to make the course one which will benefit the many in the profession who have not had the opportunities for educating themselves in correlative arts and sciences, and a post-graduate course would in

fact be a scientific and literary education, comprising physics, electricity, metallurgy, microscopy, zoölogy, botany, anatomy, embryology, histology, etc.

Nothing special can be added to what has been said in the last annual report of dentistry in foreign countries, except in a general way that Germany, France and Great Britain are well supplied with dental institutions. Austria requires a medical degree. Switzerland, Russia, Australia, Peru and Mexico have one school each, but lectures on dentistry are delivered in some of the other universities of these countries, as also in Japan, Brazil, Chili, Norway, Sweden, Spain and Italy.

Having carefully canvassed the subject, your section is of the opinion that it is quite feasible to introduce dental teaching into the public schools of at least twenty large cities, thus placing nearly a half million school children in a position to be benefited thereby. There is no doubt that in the smaller towns and the country schools the matter could be introduced without any difficulty.

The plan proposed consists in the printing of either a suitable book, pamphlet or several pamphlets, to be published under the auspices of this association. The information should be brief, to the point, disrobed of technicality, up to the present times, and calculated to enlighten the teacher. After the board of education in any city has made the study of dental physiology and hygiene obligatory, these books or pamphlets can be furnished to the schools of that city. Teachers would be compelled to enlighten themselves (which most of them would do of their own accord) and to devote a certain number of hours each year to the subject, which would be presented by the teacher to the class in a manner suitable to the age of the pupils, from the first year in the kindergarten to the highest of the high school, unless otherwise restricted by the body having control of the schools. In the larger cities arrangements may be made for a course of lectures by dentists, to which the teachers of the public schools should be admitted.

No material changes have taken place in the field of periodical literature in any part of the world during the past year, but an addition has been made to the list of publications by the appearance of *El Arte Dental* in the City of Mexico.

To the permanent literature a large number of additions have been made since the last meeting of this Association.

The nomination of an International Council on Nomenclature and Notation is proposed, as it would seem to offer the most feasible solution of this problem. With this object in view the section would recommend the appointment of a council of twelve, whose object it shall be to secure the appointment of similar councils by the national associations of Great Britain, France, Germany, Austria, Spain, Italy and other countries where such may exist. These councils could meet in their respective countries from time to time; for convenience, annually, at the time and place of the meetings of the body which appointed them; they could confer with one another and each could consider, vote upon, adopt, modify or reject the acts of the others, thus formulating and establishing a system which will at once be universal, reliable and scientifically proper. The section calls the serious attention of the members of the association to this important matter.

DR. WM. H. ATKINSON then read an interesting paper on Dental Education, and a paper on the same subject by DR. B. HOLLY SMITH, of Baltimore, was then read by Dr. J. Taft.

DR. L. C. INGERSOLL, of Keokuk, Iowa, read a paper on

METHODS IN DENTAL EDUCATION.

It is an easy matter to organize a school for the education of dentists, but it is not very easy to formulate a method of instruction. He believes that more of teaching should be in the form of questions and answers, recitations and the use of text-books. Lectures are very good in their way, but are not as satisfactory for imparting knowledge to the student as the above mentioned methods. Brief, elementary text-books are wanted, and the contents of these should be memorized by the student. In making up the faculties of the dental colleges he does not approve of the efforts made to draw students by adding a long list of names and numerous titles to each. This is also often true of long lists of clinical operators, whose names are used merely to draw students. It is questionable whether the method of teaching by different operators is not a bad practice; would it not be better to teach one good method of performing a certain operation than to confuse the student with a number of dissimilar methods? If we

compare operative dentistry to writing, we will have an idea what confusion it must be to students. Would it be good practice, in teaching the art of writing to a child, to change the teacher often? Would not the different methods and style of the teachers have an unfavorable effect on the pupil's progress? So in operative dentistry. The student can learn different methods after his graduation, at the dental society meetings or from the dental journals. He does not approve of the teaching of dentistry, or at least a large portion of it, by medical men, but is of the opinion that nearly all the branches should be taught by dentists. In the dental departments of medical colleges there is too much medicine and too little dentistry taught. While many of the correlative sciences are beneficial, and even very useful, they should not be introduced during the dental college course.

DR. D. R. STUBBLEFIELD of Nashville, Tenn., then read a paper on :

EDUCATION OF THE DENTIST OF YESTERDAY, TO-DAY AND TO-MORROW.
of which the following is an abstract :

When dentistry was a new field, the dentists were untrained in everything except the actual, mechanical aspect of the work. The field was uninviting, and none entered except those invested with a divine fitness, as it were, for that special calling. When the utmost ambition of any dentist was to be a good mechanical workman, then a Heaven-given equipment was a mechanical bias of mind and body. That was quite enough, too. That met the requirements in the case. And having this, they did better work than if they had not seen to it that such was the case before entering upon it. Because of limited knowledge, they were narrow minded. In this time of more generous information, they seem almost contemptible; but let him who, under like circumstances, would have been better, cast the first stone of condemnation.

The truth of the business is, they were foundation builders for us of to-day, and we are recreant to all proper feeling if we refuse to be grateful. They fought the fight for respectability in the scientific world; and we enjoy the victory. They developed appliances; we use them. They founded colleges of special learning; we are the learners. They questioned all methods and put infinite pains upon each; we are easily able to select the best for each case. They garnered; we feed upon their stores.

While all this is true, it can not be disputed that our profession to-day is advanced from what it was then. The sun of enlightenment has revealed the fact, now fully conceded, that dental work is necessary to mankind, and the profession itself is one of the learned ones. But in our congratulation we must not lose sight of the fact, that we are now liable to the weaknesses of the other professions. Ill-advised votaries are getting in, allured by adventitious inducements. Improper motives are at work among the young men. That they achieve something of a success, does not controvert the statement that they would have reflected more credit on themselves in the calling that satisfies all their desires, than in the half-hearted dental work, in which they had been engaged. Intelligence and industry, backed by fair cultivation, will wrest success from the jaws of failure. It is, nevertheless, a pity that inherent power should be mis-applied. Judicious selection of a calling, after mature consideration of character, should be the highest duty of parents.

The children of any profession are the natural recipients of any hereditary qualification, but the flow of heredity is often deflected entirely by the other side of the family.

It is an irrefragable fact that some are best suited for the peculiar work of our profession. Of them I propose to obtain the dentists of to-morrow. We have, then, the bias of mind and body most favorable to make an enthusiastic follower of the special duties. That is the first qualification. The second is that each shall build a deep and broad foundation of *primary education* upon which alone a professional capstone of any kind should rest. By this primary training, they can bring skilful intelligence to bear upon their professional studies. The *will* is not all-sufficient, however necessary, and the question ought to be met squarely on its merits. Dentistry of to-day, much less of to-morrow, demands a better foundation than that of yesterday. A log cabin or a wigwam might be built upon the level earth, but a Washington Monument or a Liberty Enlightening the World must have a deeply laid and a strongly constructed foundation on which to stand.

This is all back of the time when professional studies commence. The schools must take up the fight from this on, and demand more rigid application and more thorough acquaintance

before conferring degrees. The restricting laws being enacted quite generally, will soon force all applicants for the honors of dentistry to come into the profession through the schools. Their duty is before them. They must meet it.

The elevation of the morale of the profession is going on, and must be continued by the individual members now in it. We are responsible, and the responsibility is non-transferable. Each dentist is a committee, to control his own radiant sphere. The great rolling river is just what its tributary springs make it, and the profession of dentistry will be elevated or degraded by your action and mine. We must act. We must work, or die out of the way of a fitter survivor.

DR. GEO. J. FRIEDRICH, of New Orleans, La., then offered the report of the joint sections on

HYGIENE.

There is no such thing as dental hygiene, it is all merely a branch of the general subject of hygiene. The importance of the subject extends from the moment of conception until death, yet its importance is not sufficiently understood or appreciated. The great emancipator—asepsis—has lifted surgery from its mediocre position to a higher plane, a position equal to that held by general medicine. Of course, the introduction of anæsthetics has made much possible that was formerly considered out of question. Morton should receive more credit than he ever has for his share in the introduction of anæsthesia. Dietetics is a subject of great importance, and is now receiving more attention than it ever has. During pregnancy the compliance with hygienic laws is of the utmost importance, as also is the subject of dietetics; the latter improves tooth structure as well as the entire osseous frame. In relation to the hygiene of the oral cavity, it may be stated that there is need of a suitable germicide which could be made one of the ingredients of a mouthwash, but that at the same time was agreeable and not injurious to the teeth or tissues of the mouth, and that was a certain destroyer of the micro-organisms which are found in the oral cavity. The hygiene of the dental office is of the utmost importance, and yet many dentists are very negligent about hygienic matters pertaining to the dental office. Some offices are absolutely dirty, and if the instruments are kept in anything like the order of the office, it will be no wonder if at

any time syphilis is transmitted by means of them. It is known that this disease has been communicated to persons by means of the forceps. It should be remembered that disease often progresses slowly, but once under headway, we can not fathom the possible outcome. Proper hygienic precautions will often cut short diseases at the time of their inception.

FRIDAY, AUGUST 31—EVENING SESSION.

After briefly discussing the papers read at the morning session, the Joint Meeting of the American and Southern Dental Associations adjourned *sine die*.

DENTAL DEPARTMENT OF THE MEHARRY MEDICAL COLLEGE.

The corner stone of the building to be used for the dental department of Meharry Medical College was laid October 31st, with appropriate ceremonies, Bishop Walden of the M. E. Church officiating. The Meharry Medical College, is now attached to the Central University of Tennessee. The new building is for the purpose of enlarging the usefulness of this noble institution and to make it able to give the colored people of the South a more thorough knowledge of the medical and dental sciences. It is the intention of the faculty to also add a pharmaceutical department, the need of which has been frequently manifested by calls upon the institution for educated colored pharmacists. With the exception of the Howard School in Washington, which is for white and colored, there is no medical school for colored people in the United States, and when the new building is completed, the corner stone of which was laid October 31st, this will be the only fully equipped dental college in the world devoted to the colored race. There are a few colored dentists, one in Atlanta being particularly successful, while five have graduated from the Meharry Medical College. Two of these are enjoying a lucrative practice in that profession. When the facts are considered the importance of this new building can be seen at once.

The building will be 40 feet front by 60 in depth, and three stories in height. The first story, which is now well under way, will be used as a dental and clinical laboratory; the second story as a dental infirmary and a room for the department of pharmacy; the third floor will be an amphitheatre capable of seating from 200 to 300 students.

The school belongs to the American Association of Dental Faculties, and its diplomas are therefore received anywhere in the United States. It already stands high, and when its new building is completed there is no doubt of the success of the institution.

—*Nashville paper.*

THE DENTAL REVIEW.

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WRITING FOR DENTAL SOCIETIES.

We often hear papers read at societies in the absence of the author, and this reprehensible practice is becoming so general that it is time to discontinue it. Next, in the estimation of the society, to the man who promises to grace its meeting by his presence, and who at the last moment fails to materialize, is the dentist who promises to "be there" and read his paper, but who is prevented from coming by an "important case," "sickness of self or family," or some trivial excuse, but he graciously sends his paper, to be read in a garbled, hesitating way, by some one into whose hands it has just been thrust, or who knows nothing of, and cares less for, the subject discussed and who can not decipher the hieroglyphics of the absent author. The paper—usually a short and carelessly prepared one—takes up the time of the society; if there is nothing new in it, it may as well not be read; and if there is anything new which is not thoroughly understood, there is no one there to explain it.

Last month, at a society meeting in Illinois, a paper was sent by a gentleman (whose failure to read his own papers will soon be proverbial); it was hastily written, the conclusions were obscure, and in five minutes time any average penman could certainly have written it, for in two minutes or less it was read. It may be stated, to the credit of the society, that it took up the paper, out of its order, the last thing before adjournment in the evening, in order to waste no time, for all were too tired to listen to it or to discuss it. In this manner a paper can be read, and put out of the way very gracefully.

It is well enough for dental societies to accept papers and have them read, even when it is known that the author would not be present, but this fact should be stated on the programme, and the paper should be in the hands of some one who is familiar with the subject of the essay, and who has been given time to read it or study it beforehand.

Of course, the assistant can tell the patients of the doctor's visit to the So-and-so Society at Such-a-place, while the doctor can go fishing and thus recuperate, but looked at from any standpoint we may select, the dental society who mentions the name on its programme, is done an injustice, and those who attend the meeting have a right to object to that kind of treatment.

DUTIES OF EXECUTIVE COMMITTEES.

The various Executive Committees of the Dental Societies that meet early in the year, are now, or should be, planning their programmes, cogitating over topics that will provoke discussion and prove interesting to the various bodies they represent, therefore, a few suggestions may not be out of place at this time. In the first place, the officers should have some knowledge of the needs of the society, and of the capacity for certain lines of study of the members, so that the whole membership may gain by their judicious plan of campaign. There are certain subjects that societies never weary of discussing, subjects that are so practical that each individual member may express an opinion on or give some valuable hint. Then there are other ideas that are new, that may be practical or otherwise, which require an exponent in some one who has studied them, or given them special attention, and it is those whose fertile ingenuity place before the profession the many valuable aids to the more thorough practice of our specialty, the committees should bespeak for help. Then follow those lines of thought that are denominated theoretical. Too much theory will kill a society just as easily as the entire absence of theory will produce a like result.

To devote *much* time to speculation on ideas that have not yet shown their practical value, is valuable time wasted, and to attend a society meeting extending over several days, without

some new thought being offered for the members to ponder over and study during the next year, is like eating a meal without salt to savor it. The society that is not continually on the advance, is surely making a retrograde movement, stasis means death. The new material that is constantly being added to societies, in its young members, should not be overlooked, for by proper training good results will accrue. 'Tis time to begin work.

PARREIDT'S COMPENDIUM OF DENTISTRY AND THE DENTAL REVIEW.

We are assured by the publisher that this work will be ready about the 20th of the present month. Judging from the advance sheets, we are confident that the book will deserve the hearty indorsement of the profession. It was written by one of the ablest of dental writers and practitioners of Germany, and the translation has been annotated by Dr. G. V. Black, so as to make it conform to the wants of American readers. By an ingenious adaptation, the subjects treated and the condensed information contained in the volume of a little over two hundred pages, comprises the entire domain of dental science. The work will be of unquestioned benefit to the dental, as well as the medical practitioner, and to the dental or medical student a book of this character is indispensable.

We call the attention of the readers to the advertisement on another page, and suggest to subscribers and others that they take advantage of the offer of the publisher, and in subscribing for 1889, they also subscribe for Parreidt's Compendium. The subscription price for each is \$2.50, while both may be had for \$4.00.

THE DENTAL REVIEW.

Heretofore we have not reproduced any of the kindly notices extended to the DENTAL REVIEW by our contemporaries, but the subjoined may tend to show in what esteem this journal is held by the two leading dental journals of England and France. The *Journal of the British Dental Association*, in reproducing the article on "Americans in England," published in the August

number of the DENTAL REVIEW, says : * * “For the benefit of those of our readers who do not see that excellent journal, we subjoin the article from the DENTAL REVIEW (Chicago). * * * The DENTAL REVIEW, which is an independent journal and says what it thinks is right without fear or favor, and is moreover conducted by a select body of American practitioners of high repute, has replied to our challenge, exactly as we should have expected from a journal conducted by scholars and gentlemen untrammelled by ulterior considerations. * * * Our readers will find, at another page, what reputable Americans think of disreputable pseudo-Americans ; and when they are asked what American dentistry means in the leaflets and pamphlets that are being scattered broadcast by the quack advertisers, they will find the opinion of upright and respectable American dentists upon the point stated both forcibly and pithily, in the August number of the DENTAL REVIEW.”

L'Odontologie, in a review of the periodical dental literature of the United States, says :

The DENTAL REVIEW is edited by our friend Harlan with the aid of other dentists in Chicago ; like the *Cosmos*, and *Independent Practitioner*, it comprises among its readers, all dentists, who in America, keep abreast with the progress of the profession. There are comparatively few American dentists who are as well known to the dentists of Europe as M. Harlan, who has made us several visits already. The originality of the DENTAL REVIEW consists principally of the decided leaning of its editor towards advancement ; he would like to see dentistry occupying a prominent position as a science and art, in America.

“The American spirit however, is averse to anything which is not possible of immediate application, and empiricism suffices for the largest number of our confrères across the ocean.

“M. Harlan has done much in advancing improved methods of practice, by his extensive knowledge of *materia medica* — as, for instance, in the treatment of *pyorrhœa alveolaris*. He has been the source of profit to all who are engaged in the practice of dentistry, by his investigations in behalf of our practice pertaining to our science. He also has reason to feel proud of the privilege of being associated with M. Black, whose histological researches have made him an acknowledged authority in America.

* * * But the only journals that are read in all parts of the United States and which have quite a number of subscribers in Europe, are the *Dental Cosmos*, *Independent Practitioner*, and the **DENTAL REVIEW.**"

SUBSCRIPTIONS.

The time for renewal of subscriptions to the **REVIEW** is near at hand. Do not delay notifying the publisher as to your intentions for the ensuing year. The **REVIEW** has no dental supply house to push its circulation or ask for your subscription, but a postal card to W. T. Keener, 96 Washington St., will meet a ready response to your wish. Vol. II. will close with the December number. A limited number of copies of Vol. I. (fourteen numbers) are on hand, and those wishing to make their set complete can be accommodated.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK—THE FABLE OF THE MILK AND THE CREAM: WITH A MORAL.

To the Editor of the Dental Review:

DEAR SIR—I propose with your permission to give you the current news this month, in the shape of a "fable," the moral of which will be obvious enough to him with eyes.

Once upon a time (that is the regulation way, I believe) there was nothing that was known to be advantageous to sick people but milk. It was argued—not without good reason—that milk was nature's own remedy. When an ache or a pain could not be cured by milk it was left alone to kill the patient or itself. From this exclusive use of milk for all ailments it will not surprise anyone to know that very soon the Milk family came to feel quite superior to any other, and the individual members prided themselves on the purity of their origin and the usefulness of their lives. This pride, of course, in the natural order of events, attracted many who, though strictly speaking, were not born in the Milk family, had yet imbibed so much Milk-food from infancy that, wishing to be proud, likewise advertised them-

selves as Milk, and for a time so passed in the community as the genuine article. At first the Milk family proper held their heads high and ignored the impostors; but after a time they found that there were many who accepted the claims of the interlopers, and therefore it was deemed advisable to take an active stand. Research soon enabled them to discover that whilst, of course, all true Milks were from mammal progenitors, their rivals could do no better than trace their origin to the celebrated Duck family. This at once gave the Milks an opportunity, and they forthwith did two things: first, recalling the well known fact that the Duck family had always been ready to make a great noise with little provocation, and, further, that there was never any merit in their songs, it was resolved to adopt the call of the Ducks as an opprobrious epithet thereafter to be applied to those who dared aspire to a place in their family. And so these imposters were called "Quacks," a name they have never been able to evade to this day. A second precaution was to enact what they called a "Code of Ethics," the chief rule of which was to the effect that no member should advertise himself, thereby imitating one of the reprehensible methods of the aforesaid Quacks.

Having thus girded and guarded themselves about, it is not to be wondered at that the family of Milk increased and multiplied, always, however, retaining their high and dignified position in society. At times they were inclined, perhaps, to be a little too proud, but generally they were tolerated in their highest flights of self-adulation by their fellows, who well knew that without the Milk family all would quickly succumb to disease. Of course there were slight family jars, which from time to time seemed to threaten a disruption of the great family into distinct sects, but they were compromised in such a way that though adhering each to his own ideas, all still proudly clung to the title of membership in this illustrious family.

At last there did occur a separation. The fact is, however, so slowly was the divergence effected that for years it was not noticed at all, and it was only within a year that any special attention has been paid to the occurrence, as you shall see. To be chronological, I must first give an idea of what this separation is and how it was effected. When the Milk family had, as related, most effectually barred the entrance of spurious elements, they

were then obliged to progress within the laws that govern all of us, and, as a result, instead of remaining individually equal, slowly but surely the different members drifted about, each gradually finding his proper level, till at length there was a marked difference between the highest and the lowest. Neither is it remarkable that the superior, "upper crust," so to speak, should have chosen to float off alone and live their own lives of usefulness in their own way. They did not make any "hurrah" about it, they just simply went. They had made a great discovery, which was that the "best way to have the community healthy was undoubtedly to keep them so from the outset rather than let them sicken first and endeavor to aid them afterward." In this direction it was observed that the human family alone contracts many diseases due to improper assimilation of food; they next recognized that the most important act in assimilation is mastication, and of course mastication can not be properly performed with imperfect teeth. It was therefore to the preservation of these members that this small but superior clique addressed themselves. They soon found themselves doing so much good in the community that when they glanced back and found their old friends of the Milk family still floundering on the old lines they determined to emphasize the new departure by giving themselves a new name. They adopted the name "Cream," and have ever since been so recognized.

With the exception of an astonished stare and a quizzical smile, the remaining members of the Milk family took little notice of this movement. After a great many years, however, they acquired the habit of saying to their friends: "If your tooth aches call on my friend Cream. Of course I could attend to your snag myself; in fact, I have a 'kit of tooth-pullers' which has always been in the family; but Cream makes a sort of specialty of that sort of thing, and of course 'Live and let live!'—you know the motto."

In the course of another decade a member of the Milk family was heard to say: "Cream is a very bright man; making a great success in his chosen specialty. Did you know he is a distant connection of mine? Yes, indeed, I might say he is a member of my family. His mother was." And so the tide slowly changed, and from being the lesser light (lesser in point of num-

bers, not in brains) the Cream family assumed a most prominent position in the world; especially in the new world. They searched the fields of science and made discovery after discovery, until at last they had acquired such fame that the Milk family began to regret that they had so tamely allowed the separation, and hurled bitter invectives against their ancestors for having done so. Meanwhile the Cream family went calmly on their way learning, learning, learning. In due course of time it began to be noticed that a number of the Milk family had intermarried with members of the Cream family, and from these there began a cry for "recognition" by the former of the latter. This cry, at first the wail of an infant, grew, till it was voiced in tones that demanded to be heard by both families. The Milk family, very patronizingly, allowed it to be known that they were ready to listen to any claim the Cream family might wish to make for admission, or, as one might say, re-admission, into the parent family—thus ingeniously ignoring the fact that the cry was being made by their own renegade children. The singular thing, however, was that the Cream family proper paid no attention whatever to the matter, and allowed their step-children from the Milk family to do all the shouting, and thus to appear to be voicing their sentiments.

A fact must be mentioned here. In the metropolis of the New World, the Cream family had attained the highest honors, and the same phenomenon which had occurred in the Milk family originally, was repeated; that is, the most gifted members floated to the top, and away from their neighbors, and formed a clique. At first this clique was called the "Odontological," but very soon they became widely known as the "Creme-de-la-creme."

About a year ago, at a great congress of the Milk family, the Cream family were accorded a corner about the festive board. This was, of course, great condescension, and only brought about, as I have said, by the activity of the Milk-Cream tribe, and the indifference of the Creams themselves. Once they found themselves committed, however, the latent pride of the Creams was aroused, and they attended the festivities in becoming style. And after the blare of brass was all over, it was discovered that the Cream family had outshone their rivals at every point. This at once put them on their mettle, and instead of admitting them-

selves the eighteenth wheel of the Milk family coach, they sensibly determined to ride in future in their own vehicle. This attitude at once aroused a cry from the Milk-Creams. "For shame! How can we be so ungrateful as to ask for a thing, and then spurn it after it is granted?" But the eyes of the Cream family were opened at last, and they could not be so easily blinded. They quickly retorted that they had not asked for re-admission to the Milk family, nor were they ready to admit that they ever had belonged to that august crowd.

The retort was that it could not be denied that "Cream is nothing but a specialty of Milk."

The answer to this was, that "It is not true that Cream is a specialty of Milk. If it were so, then Milk should be superior to Cream, whereas it is a well known fact that as soon as Cream separates from Milk (which it always does at the first opportunity, the cohabitation being entirely temporary and compulsory) the value of the said Milk decreases."

Conversely it was argued that all the value accorded to Cream is really dependent on the so-called temporary residence with Milk. That were it not a rich quality of Milk, there would be no quality to the Cream.

To which the reply was: The fact bears its own condemnation, for, after all, what is the richness of the Milk but the presence of the Cream? Of what value is Milk any way. It has been admitted that without Cream, Milk amounts to very little, and therefore can do little to appease the pains of the people. On the other hand, Cream can exist very well without Milk, for it would need but a little admixture of Water to produce a very nutritious quality of Milk. And after all the Water family is most respectable, and really the founders of the Milk family, and at the bottom of all the good they do, the credit of which they take to themselves. So far as productiveness goes, Milk left alone at best produces a miserable kind of Cheese, a final habitat for vermin; and the residue is Whey. Cream, however, not only produces golden Butter, but after all is done the residue is first-class Milk.

And so the argument wages. I was invited recently to attend a meeting of the "Creme-de-la-Creme," to whom allusion has already been made, and as the announcement stated that one of

the Milk family would read an address, of course I attended, anxious to see the meeting of the two ends of the circle. I was amazed at the audacity of the Milk man, and equally so at the timidity and meekness of the Creme-de-la-creme. To let you grasp the situation, I must endeavor to recall the opening remarks of the Milk gentleman.

Mr. President and Gentlemen: After several requests to appear before you, I have at last consented. I must explain to you at the outset that if I am to speak, I shall speak freely. I have attended a number of meetings of your fraternity, and there is one thing remarkable, and which would at once be noticed by any member of our great Milk family; that is the entire absence of even a pretense to scientific knowledge by any of your members. In fact, I can give you even here to-night an evidence of what I say. I sent to your committee as a title for my address to you the subject, "Assimilation." So ignorant is the editor of your programme of the word, that I find he has placed it in quotation, as though it might be some foreign word." After this piece of audacious assurance, which was meekly received by the Creme-de-la-creme, he offered one more gratuitous impertinence by saying:

"The claim which is occasionally made that you have made additions to scientific knowledge through original research, is unfounded. At most, a few of your most cultivated members, chiefly connected with my own family, have done something with the microscope. But even there they have confined themselves to a single line of investigation, the human tooth, which, after all, is of little practical value."

After this remarkable opening, he proceeded to read his paper on assimilation, which I recognized as a rather meagre transcript from Foster's Physiology. And he wound up with the exceedingly discourteous remark, "You must excuse the slight hesitancy I have shown from time to time in reading my paper; *the truth is I dashed it off hurriedly one day, whilst riding on the cars, and have not read it since.*"

Hoopla! How is that for the Creme-de-la-creme to take in silence and pass the paper without discussion, save a brave effort by one member, which was unsupported by his confreres, and derisively smiled at by the eminent Milk gentleman. How was

it that they forgot the fact that it was just because the original Cream family understood Assimilation better than the Milk party, that they separated? How was it that the Cream of the Cream family had not a word to say under such audacious discourtesy? It is a conundrum and I never was a good guesser. But I will venture to guess, however, that the eminent Milk gentleman returned to his fellows and chuckled over the fact that the Creme-de-la-creme are so ignorant of Foster, and that possibly—*possibly*—he may have given them a new name, to-wit, Skim-de-la-skim.

MORAL.

Remember that so long as you remain Cream, you are Cream, but that as soon as you mix with Milk, you will thereafter be only Milk.

ODONTO BLAST.

New York, November 6, 1888.

FOREIGN CORRESPONDENCE.

ANTIPYRINE.

To the Editor of the Dental Review:

MY DEAR SIR—In your excellent publication, THE DENTAL REVIEW, of August, which I only received yesterday, having just returned from a vacation trip to Italy, I find allusion made to my article on the hypodermic use of antipyrine published in the July number of the REVIEW, by B. A. R. Ottolengui, M.D.S., in his letter to you on “Cocaine Toxæmia.”

I do not really understand why our able confrère should be so opposed to the drug antipyrine or its hypodermic use. He claims that antipyrine given internally is preferable on the standpoint of safety and as efficient as its hypodermic use. He also seems to have a certain fear from the use of this agent, the reasons of which remains incomprehensible to me, when he recommends antifebrine as being a safer and more potent drug.

First, as to the internal administration being preferable to the hypodermic method.

I certainly agree with Dr. Ottolengui in regard to trying first the internal administration of the antipyrine in a case of dental periostitis. I have done so myself in several cases with very sat-

isfactory results; but I am sorry to say that, in the severer forms of the affection, the internal administration of even 30 grains, and 60 grains, of the antipyrine have given no results, while the direct injection of 15 grains only has afforded relief. Since September, 1887, I have given antipyrine in 22 cases hypodermically with excellent results in every case. In some of them, the *previous internal administration* had been resorted to with *negative* results.

This, my last case as an illustration: A young foreigner, age 16, who had just arrived in Paris, came to me, stating that before leaving home a dentist had applied a medicine to relieve an acute pain in his left upper first bicuspid. While in the train, the pain had become intense in character and was still so when he came to me 24 hours later. In his tooth was a pledget of cotton which had been saturated with arsenic, and the poor boy had an extensive arsenical destruction of the soft parts, beginning at the first bicuspid, extending to the first molar. This was the cause of his suffering. I did not like to inject the antipyrine, fearing that the ulceration might extend to the injected part. I scraped away the ulcerated tissues and applied a powder of morphia sulph. to the parts; internally he was given antipyrine 60 *grains* in four doses on that day; I made two applications of the morphia powder and he felt relieved about three hours after each local application, the pain then returning as severe as ever. The next morning, the young man having been in agony all night, I concluded I would inject the antipyrine anyhow. Fifteen grains were given hypodermically, the pain disappeared in about a quarter of an hour and never returned; the next day the patient had a slightly swollen cheek and the parts injected were indurated, as a result of the injection, but no pain at all was felt. The swelling disappeared in about a week.

In this case, as in some of my previous observations, the internal administration of 60 grains of antipyrine in *twelve hours* did not produce any apparent effect, when 15 grains of the *same* preparation, taken out of the same bottle, relieved the pain when given hypodermically.

Second, as to the safety of the antipyrine, which is questioned by our professional brother, let me give the following practical observations:

Since September, 1887, I have used antipyrine in very high and continuous doses in both medical and dental practice, without having ever observed the slightest accident. It is fair for me to state, however, that I have never given it as an *antipyretic* in *febrile* patients' (typhoid fever, rheumatism, pneumonia, etc.)

The following are a few observations:

To a lady, age 55, who had suffered from a severe migraine (headache, vomiting, etc.) since the age of 15, I gave 30 grains of antipyrine daily for six weeks and 45 grains daily for another month; result, complete cure, without the slightest symptom having been felt or observed on the patient.

To a young lady, age 23, for a nervous disorder, I gave 45 grains daily for six weeks, with good medical results; but never did she complain nor have I been able to observe any evil result.

I, myself, a year ago, before prescribing the drug, took, for seven consecutive days, the three first days 45 grains daily and the four last 60 grains every day, without feeling any evil effect whatever, except on the last day a slight tendency to sleep, which might not have been the result of this agent.

I have given it to 13 patients suffering from neuralgic headache, and to others for different reasons, in doses varying from 30 to 45 grains daily, for periods of from 15 days to one month, without an evil result.

I certainly would not give such doses to febrile patients, for we know that on such patients small doses of antipyrine will reduce the temperature rapidly, it is true, but also producing profuse perspiration, which is very weakening to the patient. In a case in Germany and one in Switzerland, where 60 and 75 grains of the drug daily were given continuously for some time to a rheumatic and a phthisical patient, severe symptoms presented.

Prof. Germain Seé, who is the one who has called attention to the sedative action of the drug, has probably used this remedy more than any one else; he has never observed a severe symptom from its use; he gives it daily in 60 and 75-grain doses (others have given it up to 150 and 180 grains daily).

The only symptoms observed in certain idiosyncrasies when large and long continued doses have been given, is a scarletini-form rash all over the body, which rash disappears in 24 to 48 hours when the remedy is suspended. Dr. Seé has observed that

this *rash* appears in one out of every 15 women under treatment by large and continuous doses of antipyrine, and in one out of every 60 men under the same conditions. Certain stomach irritations have been reported, when long used, they are attributed to the impurities of the drug. Antipyrine being eliminated by the kidneys in renal patients, it may offer some danger.

From the foregoing statements it seems to me that there is no ground on which to warn our confraternity against using small doses of antipyrine on the standpoint of safety, especially in *non-febrile* patients. Again, my practical observations have demonstrated to me that antifebrine is not so safe as antipyrine.

Even when given in much smaller and continuous doses than the preceding agent, it will, in certain patients, produce a general cyanosis, patient becomes blue, very much like the appearance shown by certain persons when under the influence of nitrous oxide. Experimental therapeutists have also found that antifebrine had a very pernicious influence on the red blood corpuscles, and if its administration is long continued, a general anæmia is produced.

Comparing the doses at which antipyrine and antifebrine are given, we find that antipyrine has been given as high as 180 grains in 24 hours; is daily given in 60 and 75-grain doses, while antifebrine is rarely if ever given in more than 30 grains in 24 hours, and even then in divided doses.

Dr. Hardy, Professor of Clinical Medicine of the Paris Faculty, reported a case some time ago of a patient to whom he had given 15 *grains* only of antifebrine in divided doses every 24 hours for only a few days. He was suddenly called one afternoon to his patient, when he arrived he found her dead in a cyanotic condition, having presented a train of unusual symptoms. The cyanotic condition is never produced by antipyrine. One last word in regard to antipyrine; the drug is very and too often impure, also sometimes worthless, so that a preparation of it obtained from one druggist will give favorable results in the same patient, while the same preparation obtained from another pharmacist will prove non-active, hence the variability of the action of the drug as observed by different practitioners. This will continue to be so until the manipulations for the production of the drug become less complex and more uniform.

A few words on cocaine, $\frac{1}{2}$ of a grain of the muriate, as is correctly stated by Dr. Ottolengui, could produce unpleasant effects in certain idiosyncrasies. However, out of more than five hundred injections, which I have made up to date, only in one case have I seen $\frac{1}{2}$ grain produce alarming symptoms. This case is reported in my article on cocaine, which was read at the American Dental Association. In short, a young married woman who had become very anæmic, as a consequence of a six months stay in India, where she contracted an intermittent fever, followed on her return here by a very severe abortion, which kept her several months in bed, presented to me for a short oral operation; $\frac{1}{2}$ grain of the muriate was given, which produced the usual alarming symptoms of partial fainting, irregular heart and respiratory actions, etc. She had not at all the appearances of an anæmic patient when she presented herself to me. In addition to anæmia as a contra indication, we must add the numerous series of frightened persons. *Never inject cocaine to a frightened person*, for the *smallest* dose will almost surely produce accidents. In my article to the American Dental Association, I gave the history of a woman who had been previously told of the accidents produced by cocaine, and for whom I injected 10 gtts. of distilled water, telling her it was cocaine. She presented all the symptoms which had been described to her and fainted for nearly half an hour.

I explain this apparent increased physiological action³ of the drug in those frightened persons, by the fact that their cerebral circulation previous to the injection is already, on account of their fear, in a state of more or less pronounced anæmia, as is shown by the symptoms presented, pallor of face, coldness of the surface of the body, fainting, etc. If to such a patient in a state of cerebral anæmia, you give a drug like cocaine, which is a stimulant of the vaso-constrictor filaments of the great sympathetic, producing cerebral anæmia, you almost unavoidably must produce the train of symptoms encountered in that condition.

An interesting observation in this respect is the following: A young lady, frightened, to whom I gave nearly $\frac{1}{2}$ grain of cocaine hypodermically, presented the usual unpleasant symptoms: partial fainting, irregular heart and respiratory action, coldness of the surface of the body, etc. One month later she presented

herself in the same condition, having another injection to make ; the idea occurred to me to produce a physiological cerebral congestion if possible. I obtained this by producing a continuous laugh from the patient ; which state produces, as is well known, an increase of the cerebral circulation. I then, while the face was still congested, rapidly injected $\frac{1}{2}$ grain of cocaine without producing the slightest symptom.

In conjunction with this fact I must say that I have never observed an unpleasant symptom in a plethoric subject.

I had an opportunity last summer to make a clinical application in medicine of the action of cocaine as a cerebral anæmic.

A lady came to me last summer on a very hot and oppressive day, face congested. When she entered my room she just had time to place herself in an arm chair. Cold compresses were applied to her head with no result. I concluded I would try cocaine; I injected into her cheek $\frac{1}{4}$ of a grain of cocaine ; in less than two minutes the congestion of the face disappeared and she felt perfectly well, stating that she had experienced a well being a few seconds after she felt the introduction of the syringe needle.

I recommended lately in a medical journal the propriety of using small doses of cocaine in cases of cerebral apoplexy or congestion and in sunstroke, in which condition we want to produce as rapid as possible a decrease in the activity of the cerebral circulation.

Another anæmic patient, to whom I had given a small dose of cocaine for a dental operation, presented unpleasant symptoms. I placed her under a tonic and iron treatment for about six weeks, after which time an injection of $\frac{1}{2}$ grain did not produce one single symptom.

I also refuse to give cocaine in advanced cardiac and pulmonary diseases, as well as in diabetic and albuminuric patients.

As regard the treatment of the accidents, I immediately place the patient in a dorsal recumbent position ; placing even a cushion under the body, so as to elevate it higher than the head. In an extreme case I would not hesitate to suspend the patient, by raising up the lower extremities, allowing the head to hang down, so as to help the restoration of the cerebral circulation.

As regards medical treatment, inhalations of two to five drops at a time, of nitrite of amyl, are to be recommended, stopping the

inhalations as soon as the color *begins to return* to the cheek. These inhalations are renewed if necessary a moment later, when the flushed appearance of the patient, produced by the nitrite, has disappeared.

In one case I have given internally a hot brandy punch, containing forty drops of sulphuric ether, with excellent results. The hypodermics of ether are also to be used in extreme cases.

As a conclusion, I can state as a result of practical observation that if cocaine be given hypodermically in doses varying from $\frac{1}{8}$ to $\frac{1}{2}$ grain of the muriate salt (dose to vary according to the length of the operation), to persons who do not present the above named unfavorable conditions: fright, anæmia, advanced general disease, etc., no great fear need be entertained in the use of this method. I remain, my dear sir,

Yours very sincerely,

ARTHUR C. HUGENSCHMIDT, M.D., D.D.S.,

Paris, France.

REVIEWS AND ABSTRACTS.

SURGICAL ANTISEPTICS.*

In a prize essay, written for the medical faculty of Greisswald, and published quite recently in Germany, Mr. Martens gives the results of some important researches on the relative antiseptic properties of various chemicals, especially in regard to their potency against the micrococci of pus. The author seems to challenge the soundness of estimating the value of any antiseptic by its destructive influence on the anthrax bacillus. The general impression of the highly refractory nature of the micro-organism of anthrax was founded upon the theories of the eminent bacteriologist Koch; but Martens has worked upon an assumption of the greater importance of examining the power of different compounds likely to possess antiseptic properties, upon the particular bacillus, whose action they are intended to inhibit. The principal micro-organisms against which antiseptics are arrayed are, of course, those of pus formed on wounded surfaces, or as a product of inflammatory processes. The principal organisms met with under these conditions. are staphylococcus pyogenes aureus, albus,

*From the *Chemist and Druggist*.

or citrus, and streptococcus pyogenes. Foremost among an imposing array of chemicals put to the test is iodine. This metalloid in the most dilute solutions overcame with great slaughter the microscopic enemy against which it was pitted, being powerfully effective when only 1 part was contained in 10,000 of water.

Unfortunately, however, iodine does not confine its attentions to the micro-organisms, but irritates the surfaces to which it is applied. It is not without a more or less toxic action, and is, moreover, exceedingly volatile. Thymol is a germ-exterminator of notable prowess, being found efficient in a dilution of 1 in 5,000. This is the more noteworthy because thymol has been applied very little practically in antiseptics. Martens expresses a conviction that it deserves a more prominent place in the estimation of surgeons. Among the substances found effective in 1,000 solution were liquor sodæ hypochloritis, argentic nitrate, and the mineral acids, nitric, hydrochloric and sulphuric. Mercuric chloride also falls into this class, though the researches of Prof. Koch proved that a solution of 1 to 300,000 was effective against anthrax germs.

Benzoic acid was not of service in weaker solution than 1 in 500; while salicylic acid had to be employed in a strength of 1 in 300. The class of compounds which prove useful in 1 per cent solutions includes ferric chloride, calcic hypochlorite, one of the oldest disinfectants; acid sulphate of potassium, another chemical possessing antiseptic influence not hitherto recognized; and carbolic acid, first used in Manchester, in 1856, for the preservation of dead bodies. In the same category (1 to 100) permanganate of potassium is also found, though not suitable in wound treatment, on account of instability when in contact with organic matter; also chinoline, cupric chloride, acetate of aluminum, and resorcin.

Acetic acid, the anti-putrefactive property of which has been known from the most ancient times, was found effective against pus vibrios in 2 per cent. solution, as was also oil of turpentine. The 5 per cent. solutions include zinc chloride. The only member of the 4 per cent. solutions of much importance was boric acid, which, notwithstanding its relatively low antiseptic power is much favored on account of its immunity from toxic action, and the fact that it does not irritate the most sensitive surface. It

was first prepared from borax, in 1702, and has been largely used in Sweden for the preparation of an aqueous solution to preserve meat, fish, and also human bodies. It was recommended by Lister in 1867, as a wound dressing.

Caustic potash, acetate of copper, one of the oldest of antiseptics, which in combination with alum and copper sulphate was formerly much prized under the name "*mel ægyptiacum*"; chloride of calcium; citrate of iron, and antipyrin, figure among those compounds of which 10 per cent. solutions were necessary, while cadmium sulphate; lead acetate, which was used as a disinfectant by Paracelsus, and by Hutchinson, as an antiseptic; bicarbonate of sodium; thiosulphate of sodium, and alcohol were effective in 50 cent. solutions. Oxynitrate of bismuth was successfully used against bacteria but liquor calcis produced an effect only after a long time.

Among the ineffective media were the iodide, bromide, sulphate, nitrate and carbonate of potassium, the chloride, sulphate, bicarbonate and borate of sodium, with the chloride and sulphate of ammonium, sulphate of magnesium and zinc, calcium oxide, etc. Potassium chlorate was also found to have no antiseptic properties. Heretofore mercuric chloride has reigned as the prince of antiseptics, to the almost exclusion of all other substances. Dr. Martens' researches suggest that the aim should be not so much to discover a single and general antiseptic, as to ascertain what for each condition, wound, or degenerative process in the various parts and organs of the body, is the most convenient, the most powerful, and in a word, the best preventer of sepsis.

PAMPHLETS RECEIVED.

Historical Sketch of the Sixth District Dental Society of the State of New York, by Frank B. Darby, D.D.S., 1888. This history is interesting reading, especially to former residents of the district, and as a basis for the future dental historian it will prove invaluable. We should like to see a well written history of the American Dental Association, from its organization to the present time. Who will attempt it?

We are in receipt of a copy of a new periodical, issued by the Students' Society of the New York College of Dentistry. *The Record* publishes the minutes of the semi-monthly meetings of that society, is well printed and shows considerable energy on the part of those interested. We wish the new publication every success.

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NAUVOO, ILL., Oct. 19, 1888.

DR. A. W. HARLAN—DEAR SIR—Is dentistry considered as a specialty of medicine; and do you lecture upon this special subject in the College of Physicians and Surgeons. Do you consider it as such, and examine upon this branch of medicine at the close of the term to those wishing to become M. D. Please let me hear from you soon, as this is quite important to me, and very much oblige,

Yours respectfully, F. M. HORRELL, M. D.

[We replied that dentistry was considered a specialty of medicine by the International Medical Congress and the American Medical Association, but that it was not so considered by state boards of health. The other question was replied to in the affirmative. Any reader who may desire to answer the question in a logical manner can have space to do so in our next issue. EDITOR.]

TO THE EDITOR OF THE DENTAL REVIEW:

DEAR SIR—In the October number of the REVIEW, I notice a query by G. W. D., in regard to varnishing cavities. I presume he means varnishing a cavity before introducing a filling. What does he want to varnish the cavity for?

a To prevent the rapid transmission of thermal changes to the pulp, when living.

b To prevent the irritating effect of the chloride of zinc in cements.

c To make the gold stick (?) to the walls of the cavity.

d To have a vegetable resin instead of a metal in contact with the margin of the cavity, and thus prevent the shrinkage of the filling from the walls of the cavity.

Will varnish yield any of these results, and if so, will it be more satisfactory than other substances we have?

a A solution of gutta-percha leaves a better film, and is much better to prevent the shock from thermal changes than varnish.

b The alcohol in varnish is an irritant (ether and copal should be used if anything), while gutta-percha in chloroform is not. When cements are properly mixed, and introduced when of the proper consistency, as a general rule, they do not act as irritants.

c Don't use it for this purpose.

d If the vegetable resin were not destroyed, both by the secretions of the mouth and attrition, it might answer for this purpose, but gutta-percha is much preferable, and nothing of the kind, the best of all. Get your filling to the margin or as well to it as you can.

Yours truly, L. O.

Chicago, Oct. 30, 1888.

MEMORANDA.

Dr. J. W. Wassall has returned from Europe.

Dr. Robert Russell, of Nashville, Tennessee, is deceased.

The english translation of Parreidt's Compendium is out.

More than forty dentists were present at the Northern Illinois meeting.

Dr. F. H. Rehwinkel was absent from the Ohio State Dental Society meeting on account of severe illness.

Dr. E. L. Guffin, of Chicago, has been compelled to relinquish his practice on account of continued ill health.

Dr. Taggart operates a fan with a Tuerk water motor. He thinks a Partz battery is best for the electric mallet.

Dr. Garrett Newkirk suggests the use of nitrous oxide in combination with chloride of sodium as a bleaching agent.

C. E. Black, M. D., of Jacksonville, Ill., son of Dr. G. V. Black, has gone to Berlin and Vienna to pursue his medical studies.

A good opening for a dentist is said to be at Redlands, California, a place of 1,500 population, eight miles from San Bernardino.

Bichloride of mercury one part and collodion thirty parts has been recommended as a cure for warts. They are to be painted daily.

A member of the Northern Illinois Dental Society stated that he filled a tooth with dry cotton, and it prevented decay for six years!

The next annual meeting of the Ohio State Dental Society will be held in Cleveland on the last Wednesday in October, 1889, and continue three days.

Dr. W. B. Knapp, of Fort Wayne, Ind., whose failing health compelled him to abandon his practice temporarily, is rapidly improving at Nashville, Tenn.

One hundred and twenty-five were present at the late meeting of the Ohio State Dental Society, including visitors and students from the Dental College.

Aseptol, one per cent solution, is useful to dissolve carious edges of bone around loose teeth, injected once in eight days. It is astringent, also stimulating.

In a recent description of a new dental chair, the proprietors say, "There is not a crank used in any part of the chair." We think many get into them just the same!

We regret to announce the death of another of our old pioneers. Dr. E. H. Kilbourne, at one time president of the Illinois State Dental Society, died recently at his home in Aurora.

Dr. J. W. Cormany, of Mount Carroll, Ill., in using the electric mallet, always fills the interior of cavities with Pack's crystal cylinders, and finishes with folded or ribbon gold.

The *Journal of the British Dental Association* has nearly doubled in circulation and its advertising columns during the last year—deserved success which the REVIEW congratulates.

American Public Health Association, 1888. Sixteenth [annual meeting, Milwaukee, Wis., Tuesday, Wednesday, Thursday and Friday, November 20, 21, 22, 23, at the Athenæum Hall.

Dr. L. P. Bethel, of Toledo, Ohio, has accepted a position on the lecture staff of the Northwestern Ohio Medical College. He will tell the students all about the teeth and their diseases the coming winter.

We sent a bill a short time, since and it fell into another hand; it was returned with the following note on the envelope: "Dear Doctor, I cannot wear the teeth you made for me, they are a No. 9, and I wear a small 2!" Best full set, \$8.

We extend our sincere sympathy to Dr. J. E. Grevers, of Amsterdam, Holland, in his bereavement by the death of his wife. Mrs. Grevers will be pleasantly remembered by many of the profession who attended the International Medical Congress at Washington.

Dr. J. K. Pattison, of La Fayette, Ind., was in Chicago recently in a very bad state of health. Dr. Pattison was formerly president of the Indiana State Dental Association, and his work on the celebrated "Mabbitt" case was one of the causes of his breaking down. He is suffering from locomotor ataxy.

Central Illinois Dental Society. The above Society held its annual meeting at Lincoln, Ill., October 10, 11 and 12, 1888. The following officers were elected for the ensuing year: President, J. A. W. Davis; Vice-President, J. W. Collins; Secretary, W. A. Johnston; Treasurer, B. J. Pumpelly. Next place of meeting Peoria, Illinois.

The executive committee of the Chicago Dental Society have prepared the programme and will shortly issue the invitations for the twenty-fifth anniversary of the society. This event will occur Feb. 5, 6 and 7, 1889, and will be a memorable occasion to all concerned. We shall publish a full schedule of the programme in the December REVIEW.

At the late meeting of the Ohio State Dental Society, suitable resolutions were passed upon one of its deceased members, Dr. Geo. W. Keely. Embodied in the resolution was a provision that each member of the society be requested to wear an emblem of mourning for thirty days. Eulogies were expressed by Drs. Taft, Sillito, Butler, Berry, C. W. Dennis, Robinson and others.

The *Medical Record* has published an account of the first production of anæsthesia by the use of nitrous oxide, of the date of 1821. This occurred in Rome, New York State, and was the result of an accident. It is pretty late in the history of anæsthesia by the use of nitrous oxide, but it is vouched for by Dr. O. P. Hubbard. Pretty soon we will learn that cohesive gold was used by Ambroise Paré, and then what will become of Westcott, Dwinelle and Arthur.

At the recent meeting of the Ohio State Dental Society, the following officers were elected to serve for the ensuing year: President, C. M. Wright; First Vice-President, W. H. Sedgwick; Second Vice-President, W. H. Hague; Secretary, J. R. Callahan; Treasurer, C. I. Keely. Board of Directors, to serve three years: Drs. J. Taft, J. E. Robinson, C. H. Harroun and H. A. Smith. Two members were elected to serve on the State Board of Dental Examiners, viz.: Drs. C. R. Butler and E. G. Betty.

Mr. Thos. Gaddes, L. D. S., the editor of the *Dental Record*, London, is about to remove to the United States and take up his residence. This will leave a successor to be appointed as editor, and lecturer on dental anatomy and physiology, in the National Dental Hospital, and dean of the same institution. Mr. Gaddes is an accomplished gentleman, and it will be hard to find one who can fill the various positions left vacant by his removal from London. We gladly welcome him in his new field of labor, and hope to present him to the readers of the DENTAL REVIEW at some future time.

In the last few days H. C. Morey & Co. have closed the sale of a piece of land on the southeast corner of Harrison and Wood streets, the consideration being \$17,000. The property has a frontage of 133 feet on Harrison street and 120 on Wood street, was owned by A. G. Fisher, and is to be used for the erection of a dental school by the Chicago College of Dental Surgery, which has outgrown its present location. Work on the new college will be commenced the coming spring, and the intention is to make it the best building of the kind in the world. The locality is already given up to hospitals and medical colleges, and the addition of the dental institute will be an important one. The land for the site was sold on very favorable terms, from the fact that the owner is interested in the success of the school.

STERLING, ILL., Oct. 20, 1888.

EDITOR DENTAL REVIEW.—*Dear Sir:* I herewith send you report of the recent meeting of the "Northern Illinois Dental Society," at Freeport. Total number present, 46; new members elected, 15; lost by withdrawal, 2; present membership, 63.

The time of the annual meeting was changed to the *third* Wednesday in October, so as to not conflict with the meeting of the Central Illinois Dental Society.

Telegrams of fraternal greeting and good wishes were exchanged with the Central Society, which was in session at Lincoln at the same time. Election of officers resulted as follows:—President, W. H. Taggart, Freeport; Vice-Pres., M. L. Hanaford, Rockford; Secy., T. W. Beckwith, Sterling; Treasurer, C. J. Underwood, Elgin. Ex. Committee, G. W. Dennis, Chairman, LaSalle; E. V. H. Alexander, Sterling; Thos. G. Wonderly, Galena. Committee on appliances, C. P. Dorn, Naperville.

Adjourned, to meet at Sterling on the third Wednesday in October, 1889.

T. W. BECKWITH, Secy.

The following correspondence is both unique and interesting, from the fact that it purports to come from a professional gentleman highly educated in medicine:

Oct.—, 1888.

Mssrs. Please Find inclosed 100 one Dollar for which send me Some intruments that I can Fill some teath With.

Will talk with you inguard to a second hand Engine soon Plese send Cheap Mouth Glass and The Rest in a Sorted instruments For Filling by hand you will now What I will need most and oblige Dr.—.

The above order was filled by forwarding two pluggers, and a demand was made that if twenty-five cents be remitted a mouth glass would be forthcoming. The M. D. replied as follows:

Mrs. Your od pluggars received Will Say I did not think your instruments were so expensive Did not think would cost over 35 to 50 c Doz that is hand Instruments I havent Got Eny thing more that I can Fill a tooth with.

Find Inclosed 25c Send The miror Your Rsp Dr—

Plese Send Lustreated Cataloug and prices List.

THE DENTAL REVIEW.

VOL. II.

CHICAGO, DECEMBER 15, 1888.

No. 12.

ORIGINAL COMMUNICATIONS.

PROTHETIC DENTISTRY.*

BY EDGAR D. SWAIN, D.D.S., CHICAGO, ILL.

It is more than probable that disfigurement to the dental arch, by accident or disease, to one of the beaux or belles of ancient days, first suggested the idea of prothetic dentistry. It may have been then, as sometimes now, only a piece of white wax so arranged as to conceal the defect, but from that it grew, first to a carved wooden block, then the bone or ivory imitation secured by ligature to adjoining teeth. The inconvenience of these appliances, with a growing demand, stimulated the inventive faculties, and soon followed the bone or ivory tooth, attached to a base plate carved from the same material. (At least one nation—the Japanese—has not yet got beyond this stage.) Then followed the use of natural teeth, and these were supplanted by imitations in porcelain, which still hold their place. As late as 1848, however, Harris wrote that “human teeth are preferable to all others for substitutes.”

Following this line of thought, we are reasonably well warranted in assuming that dentistry is the outgrowth of pride—a desire to provide a substitute for a missing member rather than any desire to save a natural organ. Be that as it may, this branch of our profession has grown until we are able not only to supply a substitute difficult of detection, but almost as useful as the natural organs themselves.

And if it be true that the average length of human life is increasing, may we not believe one of the causes to be a better

* Read before the Central Illinois Dental Society.

mastication of food and consequent better digestion and assimilation, resulting from the general use of perfected artificial teeth by almost all whose loss of the natural ones makes it necessary.

Dentists have of late years discussed the question, to some extent, as to the advisability of dividing our calling into two parts, to be called surgical or operative, and prothetic dentistry. For one, I have favored such a division, but of late years, as I review the improvements in the latter, I am puzzled to locate a dividing line, but am almost convinced that time will fix it, by encroachments of the mechanical, almost to the point of restricting the surgical to the simple use of the knife and extraction of fangs which can no longer support an artificial crown.

Considering the importance of the mouth in the human economy, and the part played by its dental attachments, is it to be wondered that the profession of dentistry has reached so important a place?

We find it concerned in the four primary stages of digestion, namely, prehension, mastication, insalivation and deglutition; besides, through it we convey to one another our thoughts, by the act of speech, and it gives to the human face a more varied expression than any other organ. Without teeth the expression, if not entirely lost, is greatly impaired; enunciation becomes thick and lisping, and mastication impossible. Shakespeare recognized this when in "As You Like It" he puts into the mouth of Jacques these words:

"Last scene of all,
That ends this strange, eventful history,
As second childishness and mere oblivion
Sans teeth, sans eyes, sans taste, sans everything."

Considering then the importance of the subject before us, not only from the practical and useful, but also the æsthetic requirements, is it strange that the best thoughts of our best men have been turned in this direction?

It is lamentably true that in prothetic dentistry we have many failures, as many or more than in the surgical or operative department, and this must be so as long as men make artificial dental substitutes without seeing the person for whom they are intended. Certain offices have their laboratories three or more stories above their offices; an impression, with a bite in wax, is

sent up a dumb-waiter, and the speaking tube beside it conveys the directions: "Medium size dark (or light) teeth; to be done day after to-morrow," or sooner perhaps. Under such circumstances it is not at all strange that the qualities mentioned by Mr. Bonwill in the "American System of Dentistry" as necessary for a successful practitioner are not always evidenced in the productions which greet our eyes in offices, on the street, in the home — everywhere.

These conditions, however, must prevail to a greater or less extent so long as people feel the necessity of buying for the lowest possible price, or men calling themselves dentists are compelled to work for prices that insure them bread to eat, and clothes to wear.

I am inclined to the belief that our colleges are open to censure for much of the laxity in this direction, for it is true that most of the graduates of the present look upon mechanical dentistry with disfavor when they seek employment in our offices; they expect to be employed as operative dentists, seeming to believe prothetic dentistry beneath their capabilities. I have been almost persuaded that one reason for this is that they have received insufficient instruction. In more than one instance I have found them entirely incompetent to prepare any kind of a metal plate for trial into the mouth, and in some cases to even properly repair a broken rubber plate. The fact that certain colleges are devising new methods for teaching this branch, to my mind is evidence that they realize their shortcomings and plead guilty to the charges; and we may hope that with the improved methods of teaching, coupled with a few lectures upon æsthetic and ethical culture, we may soon look for improvement in this direction.

A mechanical dentist needs to be all that the name implies. I mean by this one who looks for an approximate perfection in his art. He must possess what we may call a mechanical inventive faculty; he must possess the faculty of seeing his work in advance and invent means to overcome difficulties before they are reached; he should possess enough of those faculties which make the artist to select a form and color in teeth to harmonize with the features and complexion of the individual who is to wear them — a tooth may be elegant in shape and color, yet if it lacks

other qualities, and is unskillfully set in the arch, it becomes a failure.

The same block of gum-teeth may be given a very different appearance when set by different operators, so much so as not to be recognizable. Perfection in the requirements just mentioned can only be obtained either from correct instruction followed by long practice, or by those who have naturally artistic instincts, and as every person in a profession so numerous as ours can not possess this faculty, we must look forward to a time when the most proficient in this direction shall become our educators, and under their direction and advice those students possessing it become specialists.

All realize that the first and one of the most important steps toward success is the securing of a good impression of the parts to be covered by the base plate, and I think we are almost a unit as to the best material for this purpose, viz., "plaster of paris;" because when applied to the parts and steadily held until hard it is not changed in removal, neither does it change afterward; if removed at the proper time and broken in so doing, the fracture will be clean and sharp, allowing a ready and correct readjustment of the several parts.

While I would not assume myself competent to instruct the members of this society in the art of impression taking, I shall venture a few thoughts upon general principles and difficult cases. First, I assume that a cup or tray should be selected to approximate as near as possible to the jaw of which the impression is to be taken, and if one cannot be found suitable, it should be made so, with pliers, shears and files. They are not so expensive that we need hesitate to ruin one. I never show a stranger into my own laboratory without just a little chagrin at the appearance of my impression cups, they are so cut, hammered and uncouth in shape, but they answer my purpose, and I send for a new one only when an old one can not be battered or coaxed into the desired shape. For edentulous jaws the cups in the market will generally answer the purpose.

When an impression is to be made entirely of plaster, it is my custom to place three small pieces of softened wax inside the cup, one at its anterior and one on each side near the heels, then a narrow strip of base plate is carried across the posterior border;

the cup so prepared is then pressed gently to the mouth; the wax gives three points of rest and the base plate rim prevents the escape of plaster into the throat and consequent nausea. When inserted the posterior portion of the cup should be placed in contact with that part of the mouth and gradually carried up until the wax rests are felt. This allows the surplus plaster to escape anteriorly, saving much that is unpleasant for both operator and patient.

If the mouth have a high arch, it is my custom to first take an impression with wax, then with a spatula cut away the posterior surplus nearly to the line where the plate is expected to rest, cut out the inside to a depth of about one-twelfth of an inch, leaving the three points of rest mentioned above.

This gives me an impression cup so nearly the shape of the jaw that very little plaster is necessary to secure the impression. This is also my custom for securing impressions for partial cases. In case the teeth are elongated, leaning, or undercuts abound, liable to draw and break the impression, I prepare them by building about them with modeling compound or gutta percha in such a manner as to invert the former shape, turn the point of the cone toward the end of the teeth, its base toward the jaw. The impression secured, these pieces are removed from the mouth and placed in their respective places within it. If the case be of the lower jaw, with a heavy undercut at its anterior lingual aspect, as sometimes happens, I fill the undercut with plaster, using a spatula for this purpose; when hard remove and trim smoothly to any desired shape, replacing it in position when ready to take the impression.

To enumerate all the difficulties encountered in impression taking which must be overcome would take a much longer essay than you would care to listen to from one man, and, as I have before said, the operator must, in the absence of set rules, invent the means to overcome them. However, I will give you one rule: Always secure an impression satisfactory to yourself before going further, and seldom if ever depend upon modeling compounds or wax; they are unreliable.

The next step is to secure a reverse or model from the impression. A simple thing to do you say; and so it is, but I believe I know men of years of practice who have never yet

succeeded unless by accident. I care not whether one uses varnish, soap water or oil to assist in making separation between impression and model easier. My custom is to use varnish and oil. Shellac varnish penetrates the plaster, coloring it, making it safer in case any portion of the impression has to be cut away. In mixing for the mold, the plaster should be placed into the water, never the reverse. This removes the air from it and prevents the liability to air-holes in the model, which are sometimes very vexatious, especially for rubber base. One essential is a smooth model, one that will leave the palatine surface of the plate as nearly polished as possible. I have used and highly commend the following method recommended by Dr. C. C. Evarts in the *Ohio Journal*:

“After getting the impression in plaster, give it a coat of shellac varnish, not too thin, and while it is drying run a ring of sheet wax around it an inch or so deep. After the varnish is perfectly dry, instead of oiling, sprinkle powdered soapstone (or French chalk, so called) over the impression, then with a soft brush rub every part of it thoroughly, finally shaking out the surplus. Mix the plaster thin and pour, tapping the cup gently until the plaster commences to set.”

This method will give you a model with a smooth glazed surface; if impaired by making your trial plate upon it, it is readily restored by treating the model in the same manner just before closing the flask. A model thus prepared separates from the plate clean and leaves a surface almost polished after vulcanizing.

The subject of the selection of and setting up or arranging a set of teeth is too large to receive justice in an essay of this character; in fact, an entire half hour could be profitably spent upon it alone. Therefore I will only offer a few general thoughts upon it.

First. Do not select teeth too small, even though your patient does admire them. If they are even a little larger than required, the fault will be less than if reversed.

Second. Do not select teeth too white; better a little too dark than too white.

Third. Use plain teeth in preference to gum blocks when ever possible, because of the greater latitude they give in ar-

rangement and overcoming difficulties in general. With size and color always consider the strength of the tooth when set. I mean select a tooth that, when set, will not have been cut away from either end so as to endanger the stability of the pins.

Select teeth with the bite as long as the case will admit without jeopardizing strength or beauty.

I consider the substituting of a single lost tooth, by any method of crowning, as belonging to mechanical dentistry, and I believe I am justified in saying that the dentist who extracts a fang which may be made to carry an artificial crown is guilty of malpractice. Of course, circumstances alter cases, but where only a single or half dozen fangs exist, and the remaining teeth are fairly good, extraction for the purpose of inserting a plate should not be resorted to; also, I claim that the restoration of any part of a natural tooth crown by porcelain belongs to prosthetic dentistry.

With the multitude of porcelain crowns now in the market, and various methods, simple and complex, for constructing other crowns now at our hands, he must be a poor dentist indeed who can not produce something ornamental and useful for any good fang anterior to the third molar. For one of my own patients I inserted on the inferior jaw ten gold crowns, six anterior teeth, one left bicuspid, and on the right side two bicuspids and a molar, and I know that better service was rendered than could have been done otherwise.

When I stated at the commencement of this essay that the mechanical was hard crowding the operative branch of our profession, I had in mind the advance made during the past few years in the restoration of partially destroyed crowns of natural teeth by the porcelain dental art. It seems only necessary that some thinking man suggest a want or theory to the profession, when there appears to be ready a hundred ingenious hands to work them out and put in form for practical use.

Dr. C. H. Land, of Detroit, Dr. Storer How, and others are experimenting in this direction, with results which are so very promising for the future that no progressive dentist can afford to ignore them. It looks now as though we can almost see the day

when the disfigurement of anterior teeth by filling with gold will no longer be a part of the dentist's vocation.

It is not necessary that I should again consider the different materials used for base plates or the numerous substitutes offered by our profession. You are all familiar with the criticisms which have been made over and over again, but in closing I wish to allude to what seems to me to be the coming base for artificial teeth.

The older men among us will remember how, during the days of tyranny practiced by the Goodyear Dental Rubber Company, our hopes rose when aluminum was suggested as a substitute, how we used it and how we afterwards regretted it. You will remember the efforts then made to cast plates of this material, but, owing to its low specific gravity, we failed.

Dr. Carroll has at last overcome the obstacles, and it is now as easily accomplished almost as to cast a plate of tin. Dr. Carroll has purified the metal and combined it with others, so as to make these things possible. His alloy is, I think, one per cent. each of silver, copper and platinum to the one hundred of aluminum. It is thought this combination, while it makes the metal sufficiently fluid to flow in casting, will also remove other objections which existed. I will mention a few of the qualities which make this metal valuable for this use. It is the lightest known metal, four times lighter than silver and eight times lighter than platinum. Gas fumes and sulphur do not tarnish it; it is whiter than nickel or silver, and is said to be stronger than steel. An alloy of ten pounds of aluminum to ninety of copper makes a bronze with a tensile strength of three times per square inch greater than Bessemer steel. With all these qualities in its favor, and the prospect that alloying will prevent the liability to corrosion by the weak alkalies in the oral cavities, have we not a bright promise before us?

Pardon me, gentlemen, for occupying so much of your valuable time with what seems so little of the subject under consideration.

PRESIDENT'S ADDRESS—ECONOMY IN THE DENTAL OFFICE.*

BY JAMES W. CORMANY, M. D.

After dwelling at some length upon the object of dental societies, duties of members, etc., etc., the speaker said :

There seems to be a desire on the part of some to get their names upon the programme, and then for some trivial matter to remain at home. The advertisement, if such it may be called, has been secured, but the disappointment to those assembled is great, and especially is this true to the chairman of the executive committee. Either do not allow your name to appear for a paper, a clinic, or anything, unless you are going to be on hand, death and taxes excepted. There is nothing that pleases the executive committee so much as to have the programme successfully carried out, and this can be done by each one responding promptly when his name is called ; and let your remarks be short and to the point ; give facts and conditions, and let generalities go. We have no time for old stale theories. What we want is the practical, the every day needs of the dentist, and to this end I wish to call your attention to a few things pertaining to

ECONOMY IN THE DENTAL OFFICE.

I wish to state at the beginning, that some of the matter and things suggested now are not for those who are amply able to buy, but for those who wish to avail themselves of a few hints and recipes found by one who has proved their usefulness and staying qualities, at a small expense of money, and not much more of time.

Firstly, then, Soap.—Save all small pieces of soap that accumulate about the office from the operating room and laboratory, cut into small pieces with a knife, place in a tin vessel, add a little water, pumice stone (powdered) and a very small amount of concentrated lye, boil over a slow fire until all is nearly dissolved or melted, pour out into a vessel for molding, and when cold cut the desired size, and you will have the most desirable laboratory soap anyone could wish ; it will remove all stains, and with a five cent package of soapine you will have soap for the laboratory sufficient to last a year.

*Abstract of paper read before the Northern Illinois Dental Society.

It seems to me sometimes that some of the materials we buy from the dental depots were made by men who were never inside a dental office, much less have they done any work, and especially is this true in regard to sheet wax for base plates; the wax the dental depots have for sale is like some people's pie-crust, entirely too short. *I like long pie-crust, ditto wax.*

Save all the scraps of wax and modeling composition, put into a tin vessel four inches in diameter and ten inches high, with a handle like an ordinary tin cup, it is really a tin cup with about three additions; in other words, a three story tin cup; into this place your material for making your sheet wax (your scraps of wax and modeling composition) and, if you have never made wax in this way in all probability you will have to add a pound or two of ordinary beeswax, for your vessel must be made full. Now pour water into the vessel sufficient to keep from burning, say one half pint; when all is melted lift off the fire, and have two pieces of glass just wide enough to go into the vessel containing the melted wax, and long enough to reach above the top to afford space to grasp it, near by a pail of water with a piece of ice in it; place the glass into the water until cold, now take the glass out of the water and put into the melted wax, lift out immediately, scrape off edges with spatula, plunge into the cold water, and two very nice sheets of wax, just the thickness and toughness desired will fall off, and nicer sheet wax you never used, and in one short half rainy day you can make sufficient wax to last you a year.

Twenty-five cents will buy one ounce of chloride of zinc crystals. Five cents will buy one ounce of oxide of zinc. Make a saturated solution of zinc chloride in water, and this with your oxide will make you five dollars worth of oxychloride of zinc, as bought from the manufacturers.

An ordinary ledger with the following characters, will enable you to keep the record correctly of any given case as well as the most expensive record book now in the market.

Name the teeth in the superior maxillary, commencing with central incisor, right or left, *a, b, c, d, e, f, g, h*. Name the teeth in inferior maxillary, commencing with the central incisor, right or left, *1, 2, 3, 4, 5, 6, 7, 8*. Let the following marks indicate respective place on or in the tooth :

- △ Crown.
- Anterior.
- | Posterior.
- + Outside.
- ⊙ Inside.
- ♀ Pulp chamber filled.

Now what more do you want ? To illustrate, a cavity in first bicuspid, superior maxillary, right side, in crown; on the books it would appear like this :

John Jones, Dr.

To 1 gold filling △ d R.

Now if same tooth had pulp removed and chamber filled, it would read like this :

To 1 root filling ♀ d R.

To 1 gold “ △ d R.

Is that not simple and plain enough.

Nerve broaches, with barbs removed, makes an excellent instrument for working gutta-percha into root canals

It is not necessary to pay three dollars and a half for a rubber dam punch, but stretch your dam over the end of an ordinary excavator, and by touching near the point with a sharp instrument a hole will be made as perfect as by any punch in the market.

Make your matrices out of an ordinary strip of tin or copper, and by pinching or soldering the ends together this will answer the purpose of a more expensive instrument.

Do not throw an excavator away because you have broken the point off, but heat this same end over alcohol or gas flame, and with the anvil and hammer so shape as to make a larger instrument, and if you do not possess the skill to shape with anvil and hammer, you can surely grind, and when made in proper shape, heat to cherry red and plunge into a piece of ordinary toilet soap, and you will have a tempered instrument that will cut glass.

Cut your rubber dam in pieces about four by nine inches ; now at the narrow end, about one inch back, punch your holes for the teeth, after used this way, wash, rinse, and dry well, then cut off about two inches from the end containing the holes, and your remaining piece is ready for your patient again. This way you will get the full use of your dam without much waste.

Gentlemen, it is not necessary to always use the rubber dam, an

ordinary small napkin, properly folded with skilled fingers will keep a cavity dry sufficiently long to insert any amalgam filling. I make my small napkins out of birds eye linen, costs about thirty cents a yard, and a yard will make eighteen napkins. They do not need to be hemmed, and when the starch is washed out, make a very nice useful napkin, inexpensive and all that could be desired. I have had made a set of little appliances which I call a tongue and napkin holder, which I will explain during the clinics, and there is no patent on them and you are all free to make and use them all you desire.

An ordinary diary will make you a splendid appointment book; mine costs me generally fifteen cents.

When you hear a man get up in society and say, to adjust a the rubber dam properly it is necessary to use floss silk, and you ask him to give a clinic, and in ninety-nine cases out of a hundred he will tie the dam on with ordinary linen thread, which costs per two ounce spool, No. 35, just 30 cents.

And now, gentlemen, you are well aware there is not a perfect dentist in the world, and while I might not do just as you would, I must say with the gifted Gadus, "Do as I tell you, but not as I do," and perhaps some good will fall at last far off at last to all, and when my head is silvered with gray, and this physical organization approaches the grave, and my spirit takes its flight I trust to a better world, I want it said of me that I have done what I could to advance the cause of the profession which we all so dearly love. I thank you for your kind attention.

THE MANAGEMENT OF CHILDREN IN THE DENTAL OFFICE.*

BY GARRETT NEWKIRK, M. D., CHICAGO, ILLINOIS.

The relations of the dentist to the children of his patrons, and the special features of practice, as to the deciduous teeth and first molars, have received of late considerable attention. They are deserving of very much more attention than they have received.

They are questions in which I have taken perhaps more than an ordinary interest, from the fact that for several years it has been my task, and a pleasant one, to relieve the professor of Operative Dentistry in the Chicago College of Dental Surgery,

* Read before the Central Illinois Dental Society.

of that branch of his subject relating to the deciduous teeth. As a part of each course of lectures, therefore, several in succession have been given on the Management of Children and the treatment of their teeth.

I am convinced from all I have seen and heard in relation to the subject, that only a small minority of dentists have given it the consideration its importance demands. Several articles recently published, notably two in the *Archives of Dentistry*, have not tended to change my opinion, but have helped to determine my choice of a subject in answer to the request of your committee to "*write something*."

In the articles referred to, the management of children has been considered from two very different standpoints; both articles are, I fear, misleading, and one at least calculated to do much harm, especially with younger dentists.

The first writer speaks particularly of timid children, those of the sensitive, shrinking sort, and gives some very good advice with reference to their management; but he speaks of them as though all children were alike, ignoring those of a different sort.

The second writer assumes that the class spoken of by the first must consist of very rare specimens indeed, which it has not been his fortune to discover. His experience has been with children of a different sort, a type of whom he describes — the boy who kicked the assistant in the stomach, bent the operator's spectacles cross-eyed and smashed things generally.

The gentle man closes his ironic article as follows:

"The good doctor who offers such excellent advice about the treatment of children, will pardon us if we sometimes think a good big, well developed club would be the most effectual treatment that the dear little thing could receive before undergoing a dental operation. But perhaps we are wrong; our conscience has become hardened by the many violent conflicts we have had with our little patients, so we probably could not give a just opinion in the matter."

We must agree with the writer that the "treatment" recommended would be in one sense effectual, and we should trust on the principle of the boomerang, to the club holder. But we venture to assert that the doctor quoted is not so bad a fellow as he would make us believe.

In the first place he probably does not like children. He looks upon them as antagonists and not friends the moment they appear. He expects to have trouble with them and he has. Combativeness begets combativeness and *violent conflicts* occur as a matter of course. The doctor should remember however, that it takes two belligerent parties to make a *violent conflict*.

So much for these articles ; now,

THE GENERAL SUBJECT.

I shall say little or nothing in this paper about the treatment of their teeth, but rather of the treatment of the children themselves.

First. We make a mistake often in our estimate of character in placing them at too great a distance from their elders.

If men are "but children of larger growth" it follows that children are but little men and little women. They have in them the same elements of human nature, and exhibit fully as much variety of disposition. They have simply less development and experience, and are usually but not always more impulsive. They have not had the experience which enables some adults, not all, to exercise self control.

But on the whole, I have not been able to detect any great essential differences between children and their elders. The elder has had some additional mental growth and training. If the training has been good, it makes him the better patient; otherwise he may be worse, his mind filled with unreasonable notions, dreads and fears. I should prefer the child untrained to the adult illtrained. I should prefer a patient with all his experience to get, to one whose experience has been unhappy and misleading.

As the outset we are quite apt, I think, to underrate the intelligence of children. They are often treated practically on the assumption that they know nothing, while the fact is they know a good deal. It is assumed that they are incapable of an understanding as to why things are done, but should simply submit out of deference to their elders and as a matter of course.

There is one thing children know and seem to know instinctively, and that is who like them and who don't. They know the sympathetic touch from the unsympathetic, and recognize their friends even among strangers.

If any dentist is affected with the mania of child hatred, if he looks upon children generally as being merely in the way and better out, so far as his practice is concerned, he may as well leave them out. He will only arouse all their worse elements, and if they have any spirit at all it will be manifested in well deserved antagonism.

An adult who has been trained to habits of cool calculation, may endure pain at the hands of one he dislikes, and who dislikes him for the sake of results, but children are not equal to such hypocrisy.

Any dentist who hopes to do a family practice is all wrong in permitting himself to cultivate such a disposition toward children. Children can not help being children, with all the peculiarities incident to childhood.

As dentists, they are on our hands and we can not evade the responsibility which devolves upon us. It is the part of wisdom therefore, to recognize the facts and govern ourselves accordingly. We frequently hear it said by some one: "I haven't the patience." Well, if you haven't, the quicker you set to work to acquire it the better for you. It is our *business* to have patience; we *must* have it. It is a confession of weakness to say we have it not. It is shameful to cultivate impatience.

Now, as to some points of difference in dispositions. I have found that some children have considerable reasoning power at a very early age. One four years of age could not be induced to take castor oil, the taste of which he abhorred above all things, but when its action was explained, and the reasons for its use given in simple terms, he took it like a Major. This child endured several operations on his teeth when the uses of filling had been explained to him. He was very strong willed and often obstinate, but when he was made to understand that the operations proposed would be valuable to himself, his will became an ally instead of an antagonist.

No reasonable child, with a spirit and temper of his own, will consent to the endurance of pain without the consideration of a benefit to be derived. With a child of this sort it is necessary to have an understanding beforehand with regard to what shall be done, the time required, etc. He will not submit without an agreement, and he will not agree without what seems to

him good and sufficient reason. Especially is this true regarding first operations, before one has acquired the child's full confidence.

Attention. Sometimes it is difficult to get this long enough, even with a reasonable child, to make him understand what you purpose doing. Here a dentist needs to be something of a teacher. Often the child, like the adult, is a victim of false education, and comes to the office with his head full of wrong ideas. His preconceived notions and his fears prevent the calm and logical action of his mind. No time can be better spent than in getting acquainted with such a child. Whatever is done, whether it requires one visit or three, his apprehensions must be sufficiently removed to permit of a reasonable talk and understanding, before any operation of importance is attempted.

The curious child—the child full of curiosity. I think he is in the majority, but there are some especially curious with reference to things mechanical. Such children are usually of a friendly disposition, and if greeted cordially, made to feel at home, are readily approachable by the way of their curiosity. A great many things in the office are objects of immediate interest to them; they ask many questions which should be answered as satisfactorily as possible. Such a child should be given a hand glass, that he may see his own teeth in the preliminary examination, and then during operations so that he may view the various steps taken and their final results. His interest in the matter is half the battle won. It is unfair, unwise and unkind requiring such a child to just sit and submit to whatever one chooses, without giving him anything to do or to divert his attention. Under such circumstances the sitting becomes simply an unrelieved tension on his nerves. Many adults find such treatment hard enough, and who can blame the child whose nerves refuse to bear the strain? As a principle of good, common sense give the child somewhat to think about besides the one thing of simply enduring pain.

The nervous child. This type is well illustrated by the case of little Alice G., aged 7. She has been in the chair quite often, and I have filled several of her teeth, including one devitalized. She has never been hurt much. She is brave, but still has a nervous dread of every new operation proposed. It became

necessary, a few weeks since, to remove the almost rootless crown of a lower deciduous molar (her first bicuspids are coming very early). For fully five minutes she sat in the chair trying to get courage to let me apply the forceps. She would resolutely place her hands on the arm of the chair, steady her head in the rest, open her mouth; but just at the critical moment up the hands would go in spite of herself. Beads of perspiration stood on her forehead, and she would say, "I can't, Oh, indeed, I can't!" After several attempts with the same result, I said, "Well, we won't try any more now; we will wait till another day." I sat down by my desk, called her to me, and we had a little quiet talk. I explained to her the conditions surrounding the tooth, its relations to the new one coming, and that its removal would not be very painful. She said, "I want it out, and I think I will be brave, but such an awful fear comes over me, I don't know why it is, but I tremble all over." Now, what sort of a man is he who could have any feeling other than tender sympathy for such a child as that?

Before she left the office she came to me and said, "Doctor, I believe I can have it out now, really," and she did. Her will had conquered; kind words, a little time to rest and to think had smoothed her unruly nerves, and she went through the operation beautifully.

The proud child is one whom we wish to treat with considerable deference and respect, as though he or she were already quite a man or woman. It is best to assume with him that as a matter of course he is going through all right. He is apt to feel that it would be a disgrace if some other child of his own age or younger should endure operations better than he; and so you may appeal strongly to the proud child by a casual mention of the operation you have done for Johnny D. or Mary G., and how quiet and brave they were. Without saying anything he will determine in his own mind not to be outdone by them.

There is also the child who may or may not be proud, but who particularly loves approbation. It pays to give him all the praise he deserves and possibly a little more, to take notice of his possessions and whatever pertaining to himself may be admired. Our appreciation of him and his is the best evidence, in his estimation, that we are worthy of confidence.

On the other hand we find children, as we do adults, who are not particularly intelligent or reasonable; not specially nervous or timid; not proud, and with very little, apparently, of approbateness in their dispositions. Their ears are dull to argument, they don't care what others have had done, and they don't seem to care what anybody thinks of them; though this is usually a blind, because, to some extent, they do care. But they are *secretive*, and they are *obstinate*. They would appear to be just made up of a great big *I won't*.

In addition to or without this simple obstinacy of character another has a good deal of active combativeness. He has been born belligerent. His first cry was a bugle call to arms: his first hat carried a chip. "He smelleth the battle afar;" expects martial music wherever he goes, and especially with the dentist, whom he instinctively feels is a born adversary.

There are several ways of dealing with the obstinate or the combative child who is more frequently a boy than a girl. One way is to lose one's temper and general self-control. This means failure with a child of any age from six to sixty. One way with the combative child is not to oppose a combative spirit to his. If he seems determined not to let us do what may be necessary, say to him kindly but firmly, "Very well, I can not compel you to be a good boy. I am willing to do what I know will be for your good, but it is your interest, not mine, that is concerned; it really makes no difference to me, and it shall be just as you say." Throwing all the responsibility on himself takes him by surprise and turns his thoughts into a new channel. Refusing to have a combat with him throws him "off his base," so to speak. This sort of let-alone policy, especially with the older boys, will often have the effect of sobering them very quickly.

The obstinate child, as before remarked, is usually secretive, and you can scarcely tell at times what he really thinks or intends to do. Often, however, he is at heart of a friendly disposition toward those who have once acquired his confidence. With such, especially the smaller ones, it is best to skirmish awhile, till one finds some place favorable for attack. Once penetrate the outer works of their resistance, get a little acquainted, in other words, on some ground of mutual interest, and they become as faithful friends as one could wish.

It is a very doubtful experiment to attempt to control any child by sheer physical force. If a child submits, as he may do after a brief resistance, from a sheer sense of helplessness, it may be only with the determination never to enter a dental office again. Unless the case were one of extreme emergency, and as a last resort the exercise of physical control a necessity, I should certainly prefer to let a child go indefinitely, waiting for his own consent to operations.

Moods. Children, like grown people, are subject to moods; they are not always the same. They are different on different days, according to bodily conditions and states of the weather. If conditions seem to be unfavorable; if the child is more than usually nervous; less self-controlled, it is better to let him go home with little or nothing accomplished beyond an examination. Especially is this true of first visits.

Now, I seem to hear objections to all this, that it takes too much time. It is true that primarily it seems a waste of time. We can not always charge for it, but in the end it will pay, if not in money, certainly in moral influence. But as to the time, we may avoid loss to some extent by making short appointments. Appointments for children should always be short—seldom, if ever, more than half an hour, and often less.

As I am a believer in short papers and full discussions I will bring this to a close, merely adding a few general rules and considerations.

First. With all children we should be strictly truthful, not deceiving them ourselves nor permitting others to do so in our offices. Confidence is everything, and can not be obtained by deception.

Second. Next to truthfulness as to facts, genuine kindness and friendliness; make them feel that we have their interests at heart.

Third. Treat them more like ladies and gentlemen than it is usual for people to do. Appeal to their sense of manliness and womanliness. Use gentle tones in speaking to them—this has often a wonderful influence, and not alone with children.

Fourth. Remember that *patience is first and last and has no limit.*

Fifth. We should be exceedingly careful in our manipula-

tions. All nature cries anathema on the man who will needlessly or carelessly torture a child. *It is imperative that we have delicate instruments kept in delicate order, and handle them delicately in the mouths of children.*

DENTAL HYGIENE.*

BY DR. H. H. FITCH, PEKIN, ILLINOIS.

In his great work on "American Nervousness" Dr. Beard says in substance that nervousness, which he has previously described as "nervelessness" or nerve exhaustion, is the reason for the early decay of the teeth; that Americans are the most nervous nation in the world, and have the worst teeth of any nation, which is the reason that American dentists are the best dentists in the world.

This statement of Dr. Beard is confirmed by the reports of the school inspectors of Paris, who find that the scholars in the public schools suffer from an accelerated decay of the teeth from the date of their entrance. Since my attention has been called to this phase of this subject, I have noted the general fact that among individuals great mental anxiety, as well as long fevers, caused especial sensitiveness of the teeth. It does not matter from what cause this nervelessness proceeds, the effect is constant. I have noted this effect on the teeth among the students of our graded public schools, and especially in the case of those who were trying to do two years' work in one.

This American system of mental gormandizing, called education, is a constant menace to the most careful work of the dentist. The mental dyspepsia which follows this overloading of the brain deranges all the functions of nutrition alike. In addition to the terrible strain on the nerve forces from the regular routine of school life, there are so-called amusements and recreations—may God forgive us for lying—viz: children's exhibitions, parties, balls, May dances, etc., etc., by which the nerve tension is kept at the highest pitch; from which, indeed, the children early learn the old lesson, viz: "This world would be very agreeable if it were not for its pleasures." I once saw a French novel entitled "Memoirs of an Old Man of Twenty-

* Read before the Central Illinois Dental Society.

five," but it seems that these children were always old men and old women. While the prophets seemed to miss the mark sometimes, they "hit it fair" when they said the child should die a thousand years old.

As these matters are the result of our social and educational systems, they are beyond our control, and we can only palliate, then, so far as the teeth are concerned by "patience and plastics." If by the use of gutta-percha and oxyphosphate of zinc the decay can be arrested till the "sweet girl graduates" the tooth tissues may become more dense while she is teaching or waiting for a husband.

If the foregoing reasoning is correct, then all hygiene is dental hygiene, and everything which aids the general physical system is of advantage to the dental organs. And I wish to make some suggestions on the subject of general hygiene, believing that unless these are fully mastered our work will not reach the full measure of a reasonable success.

When Ingersoll was asked by the clergyman what he would have made different from the order of things if he had been the Creator, he promptly answered he would have made health catching instead of disease. There is no doubt that much health could be caught with less labor than boys spend in catching fish, or politicians in catching votes, and first to avoid "colds," catarrhs, congestions, Bright's disease, etc., etc., take care of the skin. In an old book is reported a conversation between two high authorities, as follows: "And Satan answered the Lord and said, skin for skin, yea, all that a man hath will he give for his life." And the succeeding experiments on old Job fully verified their judgment of importance of a healthy cuticle.

The value of salt baths as a stimulant to the healthy action of the skin has been recognized from the earliest ages. They can be taken thrice a week, or even daily, to advantage. Under this treatment catarrhs become a thing of the past—a "putrid reminiscence," as Story would say. Are congestions of the internal organs possible with the skin in healthful action? How can Bright's disease establish itself with the skin in perfect condition? And this bath is very easily taken. One-half cup of salt, three quarts of water, a sponge, one or two coarse towels,

and a room only moderately warm; to be followed by dumb-bell exercise or even free gymnastics.

Now, if a man once becomes addicted to dumb bells he will find it a very fascinating habit. It may even become like the "ruling passion strong in death," as with the great Forrest, who was found stark and cold with a heavy bell in each hand. A few minutes' exercise with the dumb bells is followed by a sense of exhilaration and renewed life more charming than the potent influence of old wine. The quickened circulation of the blood, the expansion of the lungs, the elasticity and tension of the muscles, the clearing of the brain, the brightening of the eye, all indicate a re-creation of the vital force. It is as near being "born again" as falls to the lot of ordinary sinners.

Not wishing to bore you with a long paper, let me commend this subject to your earnest thought and kindly criticism.

SCHLENKER'S PELÔTE (OR SHIELD) FOR TAKING IMPRESSIONS FOR OBTURATORS.*

BY M. SCHLENKER, ST. GALLEN, SWITZERLAND.

We all know that the inventor of the obturator, Dr. W. Ch. Süersen, of Berlin, recommends the attachment of an extension to the plate covering the hard palate. To this extension the gutta-percha used for taking the impression of the cleft, the posterior portion of the nasal passages and the wall of the pharynx, is attached. The plate, with the extension and the softened gutta-percha, is placed in the mouth, and the patient is instructed to swallow and read. This apparatus has been improved by our confrère, Prof. C. Sauer, of Berlin, by the attachment of a heavy iron wire, which was made to extend to the wall of the pharynx, that is, as far as the superior constrictor of the pharynx. On removing the apparatus, he cut the wire so as to allow about five mm. between its end and the pharynx wall, in order that the superior constrictor of the pharynx may be unrestrained in its movements, and that it can leave its impression in the gutta-percha mass. In addition, short pieces of wire

*Lecture delivered at the Sixty-first Session of the German Naturalists' and Physicians' Association, held at Cologne, September 19, 1888.

were attached at a right angle to the large wire, and these, also, were protected from extending entirely to the tissues in order that they (the tissues) may also be enabled to leave a correct impression in the gutta-percha.

In the case of a little girl, Frieda G., ten years of age, I could not obtain a correct impression, even with the improvements suggested by Sauer, simply because the child *did not learn how to swallow*.* In taking the impression, the swallowing is of the utmost importance, as in this act the posterior part of the dorsum of the tongue is pressed upward and backward, and the softened impression material is forced against the posterior wall of the pharynx, and this my little patient was unable to do, hence I improved or, rather, completed, Sauer's improvement by the addition of a shield (or pelôte) to the end of the wire. This shield enables one to secure an impression of all parts of the pharynx in this region under all circumstances.

In the construction of my first appliance for this purpose, I used a worn out tube of a dental engine, having a set-screw in it, attaching the tube, with the wire (carrying the shield) within it, to the extension on the rubber plate. When the apparatus was placed in the mouth, the wire carrying the shield was pushed back until it touched the superior constrictor of the pharynx, and at this time the screw in the tube was set, so as to hold the wire immovable and to prevent the displacement of the shield. The apparatus was then removed from the mouth, and the wire pushed about 3 mm. forward, so that when again introduced the shield, instead of touching the superior constrictor of the pharynx, was about 3 mm. distant from it. The shield and wire are then covered with softened gutta-percha, or Stent's composition, and replaced in the mouth. The impression is then obtained in the manner described by Süersen. The apparatus which I thus constructed was admirable for the purpose of taking the impression, but it also had some objectionable features. One of these was that the screw was too large and unpleasant in the mouth, and could not be conveniently tightened while in the mouth, which had to be done so as to prevent the displacement of the wire and shield in

* M. Schlenker : The attachment of obturators to the anterior teeth and the taking of impressions as suggested by Sauer. Lecture at the Twenty-fifth Annual Meeting of the Central Society of German Dentists, at Dresden. *Deutsche Monatschrift für Zahnheilkunde*, September 1896.

removal. Another objection I found was, that in the adjustment of the wire while in the mouth there was danger of its slipping out of the tube and dropping into the throat, an unpleasant inci-

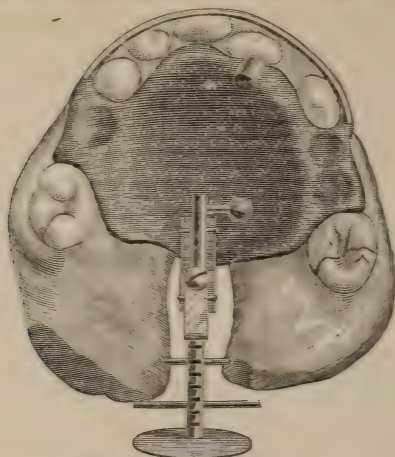


FIG. 1.—SCHLENKER'S PELÔTE (OR SHIELD) FOR TAKING IMPRESSIONS FOR OBTURATORS IN SITU.

dent which actually occurred to me while operating in the mouth of an adult. In order to overcome these objectionable features, I have constructed an entirely satisfactory apparatus. Fig. 1 is an illustration of the apparatus *in situ* on the cast, made from the impression of the case mentioned. It is attached to the extension of the rubber plate which is used for this purpose, and is just in the position in which it was when removed from the



FIG. 2.—SCHLENKER'S PELÔTE (OR SHIELD) FOR TAKING IMPRESSIONS FOR OBTURATORS.

mouth, hence just ready to receive the impression material. The plate is held firmly in the mouth by means of the wooden peg behind the irregular tooth and by the gold wire which passes

around the teeth in front. As shown in Fig. 2, the wire to which the shield is attached is provided with a lever *a*, which permits the wire *d* to turn upon its axis. To the wire is attached the shield *b*, and small wires, *c, c*, are placed at right angles. On the tube, through which the wire passes, there is a spring, *e*, attached which slips into the notches in the long wire whenever it is turned to one side by the lever *a*. Under the tube a small piece of gold plate, *f*, is soldered; this is provided with a few notches, and by passing wire in these it is fastened to the extension on the rubber plate. The apparatus is placed in the mouth with the lever turned so that the spring can not slip into any of the notches on the wire, and by pushing the wire backward or pulling it forward the shield is adjusted in its proper position, touching the wall of the pharynx; if then the lever is turned the spring will slip into one of the notches of the wire, thus holding the shield immovable while the apparatus is removed from the mouth. The shield is fastened to the wire at an angle of about 45 degrees, and when introduced the most posterior margin of the shield is upward, thus —/; when this upper border touches the pharynx, and the lever is turned, the shield turning thus, —\, it will be about 4 mm. distant from the wall of the pharynx, and be in this relative position to the tissues in its entire extent. The wire is also provided with a few holes, in which short pieces of wire are fastened.

In Fig. 1 these wires are not shown, as the cleft is very narrow and they are, hence, not necessary. They need be attached only in those cases in which the cleft is very wide, which is usually the case in congenital cleft palate.

“WATCHMAN, WHAT OF THE NIGHT?”

By C. N. JOHNSON, L.D.S., D.D.S., CHICAGO, ILL.

If the average man of intelligence to-day were asked to enumerate the learned professions, would we hear him mention dentistry among the list? Shall the history of our times when read by future generations contain reference to our calling as holding a prominent position among the arts or sciences? Are we entitled by virtue of right, either inherited or acquired, to claim recognition as a body endowed with wisdom, with dignity, with professional superiority? Is there that within us to place us justly on

an equality with the culture and refinement of true and well-rounded education? Have we among us the towering intellects of the law, or the master minds of medicine? Do we meet in our professional ranks the calm dignity of the clergy, or the subtle interpretation of the actor? Has dentistry ever produced an Abraham Lincoln, an Austin Flint, a Henry Ward Beecher, or an Edwin Forrest?

These questions come impulsively, to the mind of every thoughtful member of the profession, who looks with far-seeing and unprejudiced eye at our professional status. If answered, as I think they must be, in the negative, then does it not become meet for us to search somewhere for the cause?—thereby tending in the direction of a possible remedy.

Before doing this, however, let us see if the charge that dentistry falls short of the other professions may be sustained. In the first place we must determine as to what is a just criterion regarding the standing of any profession. If we look closely we shall see that it is one of two things—either the estimation of the associate professions, or the estimation of the world at large. No profession was ever truly great without sooner or later receiving due appreciation from one source or the other.

How does dentistry stand in view of this? Do the other professions accept dentistry as an equal? The ready response mayhap comes quickly to the ear that medicine has done so. The International Medical Congress, and the American Medical Association are pointed at as examples. We are told that in these dentistry is received on an equality with medicine.

Let us state briefly how dentistry came to be recognized in this way. Pressure was brought to bear by men in dentistry who were in themselves respected by men belonging to the medical associations. The medical men had not the heart to repulse their friends, and if the truth be told were for a time in a quandary as to what course to pursue. Let it not be foolishly thought that they for one moment believed dentistry the equal of medicine,—they did not, but when confronted with the question as to the acceptance or repulsion of dentistry, they adroitly hedged their position by claiming dentistry as a specialty of medicine and then, forsooth, with much sentimentality, they clasped the newly pledged foster child to their benevolent bosom. Remem-

ber I am not touching the question as to whether dentistry is a specialty of medicine or not. I leave that to the consideration of those who delight in the process of mental gymnastics, sufficient for the discussion of an indefinable problem.

But the fact remains that had it not been for this one thing, dentistry would not have held the relation to medicine that it does to-day. Think you that the best educated men of the medical profession in their inmost minds, hold dentistry on as high a plane as medicine? If they do they are far more charitable than the writer has ever believed them to be.

And what shall we say of the law? Do the better members of the bar mention dentistry in the same breath with their own calling? Does it ever enter the head of an eminent lawyer to compare his standing with that of an eminent dentist?

How about the clergy?

But we will not enlarge. Sufficient to say that there is not one of the learned professions that does not hold itself superior to ours; and is it not time that we recognize this fact, and ask the question whether or no they are just in their estimate.

The point is not here made that dentistry should, by reason of age or advantage, stand equal with the others. It is fully admitted that her youth is against her, and the controversy is, with those who would fain place her in a position where at present she does not belong. To do this, absurd attempts at belittling the others are sometimes made. Dentists often point out the weakness of men in the associate professions, as an evidence that those professions are no better than they should be. Many of these implications may possibly be true, but that is no argument against the profession as a body; or if it is the application holds good to dentistry as well as the others. Admitting the fact that, for instance, there are men in the medical profession who are a disgrace, not only to medicine but to mankind,—men who pervert their calling into the basest uses possible—who even probably sink lower in degradation than the similar class among dentists—does not necessarily condemn the main body of medical practitioners.

There are men of the rankest defilement in the law, but that does not make the law any the less a noble profession.

The ranks of the clergy have produced reprobates—ministers have become miscreants—divines have changed to devils—priests

have practiced perfidy, and yet no honest man will hold the better class of clergymen responsible for this. 'Tis even said that Satan himself once dwelt among the angels, and in this connection be it said to the credit of the angels, that so soon as it was discovered how one of their number had become depraved, he was forthwith expelled from their midst. Let the professions take a lesson in this regard from the angels.

Now if the associate professions hold such a view of dentistry what shall be said of the general public? Do we not hear them speaking of dentistry as a trade oftener than otherwise? Do they not place a greater distance between dentistry and the other professions, than even do the members of those professions themselves?

Not but that many of our patrons fully appreciate our services, —not that they fail to think kindly of us; but the fact remains that nowhere may we look for a recognition of dentistry as a cultivated and learned calling, and, as has been said, it may be profitable for us to study some of the causes of this disparagement. The sooner we recognize our true position, the sooner will a permanent advancement begin. It is not well for us to continue the ostrich-like tactic of hiding our professional head in the sands surrounding the temple of another calling, leaving our body exposed to the pitying contempt of those who view our distorted efforts.

Now to find one fruitful reason of our present status, it seems to me we shall not need to go very far. It may be discovered in our own midst, among our own members, within the precincts of our own profession. There is no one thing that militates so strongly against recognition and respect from the cultured class as self-glorification. This belittling sin is prevalent among us, both individually and collectively. We are too inclined to hoist ourselves on a puny pedestal, and shriek *Excelsior!* in the face of a breeze blowing conviction against our inflated claims. In the office, in society, in our conventions, there is a swelling of the *ego* within us, entirely inconsistent with our accomplishments. We must not assume greatness, either moral, mental, or scientific, until we become intellectually broad enough to sustain the assumption. To-day the rank and file of the profession are grievously deficient in those qualities which go to make up a grand, a pure, and a

perfect manhood. It is not so much that our claims on the recognition of the world are too great, as it is that our accomplishments are too small.

I am aware that sentiments of this nature may bring about the ears of the writer a storm of protest from those enthusiasts who see nothing of worth, of interest, or of attainment outside the limits of dentistry. In fact, none would have raised in revolt against the implication sooner than the writer himself but a few short months ago. He was one of those who laid the flattering unction to his precious little soul, that dentistry and dentists, were subjects worthy of the portrayal of a Michel Angelo, the poetry of a Shakspeare, or the peroration of a Demosthenes! He had existed in that idealized relation to dentistry where his conceptions and impressions were colored and formed almost entirely by the influence of dental literature. His greatest intercourse with the profession had been through the medium of dental journals; and he had grown to look upon the names recorded in those journals as belonging to men endowed with wisdom, with culture, and with professional dignity far beyond the average of the human race. It has so transpired that of late years he has been thrown much in the society of those erst-while illustrious men, and he has been forced to the conviction, first gradually and reluctantly, at last overwhelmingly and decidedly, that the majority of them are simply human—many of them painfully, pitifully, pettishly human. He begins to wonder if there be not some subtle agency connected with the practice of dentistry that tends to make a man narrow-minded.

Not that all dentists are narrow-minded, not that every practitioner should bow under pressure of such reproach, not that the writer wishes to withhold the acknowledgement that there are men among us who are worthy of every respect, and whose accomplishments in their chosen fields are well-nigh marvellous. To such men he reverently bows his head; he may well afford to—for they are few.

Then again let us look at some of the distinguishing characteristics of many of our members. The highest culture carries with it the highest refinement. Are dentists generally as refined as is consistent with true culture? Do we not sometimes see almost absolute vulgarity in our midst? The writer wishes not to

be thought prudish in this matter. He loves a laugh as well as any; but he also remembers that there is wit other than that suited only to the brothel or the bar-room.

Professional excellence demands dignity. Are dentists dignified? Let us look for answer at the spectacle presented us in many of our representative associations, the meetings of which are often relegated to the purposes of political wire-pullers. If this seems too strong a statement, let the doubter attend one of those meetings with the determination of being perfectly neutral regarding his selection of candidates for office. Unless he be reserved almost to the degree of being unsocial he will receive the admonition of one faction in contra-distinction to the admonition of another, urged with all the persuasiveness of ward politicians. Then again, the sessions are often disgraced with personalities; petty spleens and spites are allowed to influence discussion; professional courtesy is for the time, apparently forgotten, and one is fortunate if the ears are not offended with some unseemly wrangle. Is this dignified? Deportment has to do with the reputation of a profession as well as of a person.

Another thing which is apparently ignored by many as being unworthy of consideration in the case, is personal appearance. Simply because we have had learned men the world over who were notoriously careless in their habits, it seems to be accepted by some as an axiom that learning and bad linen go together. It may be admitted that good clothes do not necessarily make a good man, but they make a better looking one. A man need not be called a dude because he is well dressed. Fine apparel marks one more step between the Cannibal and the cultured man. At the same time the professional practitioner need not be gaudy. Fashion and foppishness are not necessary concomitants; diamonds and drivelers are not always found together; and one should not be called a fool because one pays some attention to the finger-nails.

It may be somewhat excusable for wholly scientific men involved in deep research, to neglect personal appearance as the result of concentration in their studies; but the practicing dentist is brought into too close relationship with refinement, beauty, and cleanliness in his patients to render laxity in these matters pardonable. A man may climb into the remote mountain heights of Switzerland to study undisturbed the characteristics of micro-

organic life, with cow-hide boots, flannel shirt, blue duck over-alls, stubby beard, and smelling of carbolic acid; but he may not, in this condition, bend over a daintily-dressed lady in the dental chair;—one who lends grace and refinement to all who are fortunate enough to come within range of her personality, one, around whose clothing clings the delicate odor of a thousand perfumed flowers, and whose smile should bring to light the best and noblest—the most gallant that lies within a man.

Now in speaking of dress, the question may be raised, and with propriety, that there are men just entering the profession who are not allowed to dress elegantly through stringency in money matters, but the fact still remains that there are many among us whose personal appearance is not commendable, where money does not enter materially into the consideration. But whether with money or without, there is no excuse for carelessness in habit or appearance—there is no excuse for being uncleanly.

A man may be a pauper and have a palate, he may be poor, and pure, he may practice cleanliness without possessing coupons; but he can not hope for a just recognition in the highest society without fulfilling all the requisites that go to make up a perfect gentleman.

Another thing, the profession in general is not well enough paid. Fees in most of our large cities are entirely too low. We can not command due appreciation for our services till we claim a reward for those services in proportion to their worth. The burden of blame in this regard lies with the older practitioners. Young men can not bring about a reformation without the precedence and co-operation of those long established. When a man practices dentistry for a dozen years in one locality without advancing his prices, it is evidence of something lacking.

If we study this matter we will find that there are three stages in the status of professional fees during the history of every city. First when the city is young and far-removed from the centres of civilization, a boom rises and prices are high in everything. Professional services are not easily obtained and fees are inflated. Soon there comes a time when professional men flock in, competition is greater, prices are demoralized, and fees run down below par. It then takes a long process of develop-

ment to gradually increase the fees, consistent with an advancing civilization, and it depends largely on the quality of the professional men how soon the fees are raised again to a substantial basis. It seems apparent that the professions in many of our cities have not kept pace with the other advancements. We are most of us in the lowest depths of the second stage, with small prospect of evolving into a permanently satisfactory condition.

Now we might consider many other causes, all of which tend to keep dentistry where it is. We might call attention to the class of material we are admitting into the profession through the medium of the colleges; we might speak of our systems of teaching, and of our requirements; but this subject of dental education is worthy of a paper in itself, and need not be treated in this connection.

In conclusion, the writer would crave indulgence to make personal explanation of the fact, that he has ventured to speak somewhat plainly regarding the faults and frailties of his brother dentists. Personally, he has been the recipient of so many kindly attentions from them, individually and collectively; he has been honored by them so often beyond his deserts; he feels that he meets them on so firm a foot-hold of well established friendship, that he has felt safe to say his honest thought without fear of having sinister motives attributed to him. He believes that none of those who know him will think that aught of malice, spite, or envy, has entered into his admonition.

To those who know him not, the assurance is here made that all has been said with the best intention and with the earnest hope that thought may be directed to the consideration of such reforms, as will result in a professional excellence attained only by men standing equal with the greatest and grandest of earth.

A NOVEL CASE OF IRREGULARITY.

By G. V. BLACK, M. D., D. D. S., CHICAGO, ILL.

To-day a lady brought her little child to consult me in regard to an irregularity of the lower incisors, one of which, the left lateral, was displaced inward. I found the child fairly well developed and healthy, but the general condition of the teeth anything but satisfactory. The patient was about eight years old,

the first permanent molars were in place and in fairly good condition. All of the incisors had erupted. The milk cuspids and molars, or their roots, for all were badly decayed, were in place, except the second right lower molar, the crown and posterior root of which were missing; and the crown of the second bicuspid was presenting through the gum. The novel point in the case was that the apical end of the remaining anterior root of the second milk molar was caught in the sulcus of the second bicuspid while its jagged crown end had impinged against the neck of the first milk molar just under the prominent cervical enamel margin. It seems that while the root was locked in this position the second bicuspid continued to rise toward its position in the arch but was forced back against the first molar, while at the same time the first milk molar was carried forward, the root, which was acting as a prop, inclining more and more toward the horizontal position, until at the time of observation it was lying almost flat on the gum. On removing the root I found the space between the second bicuspid and the first milk molar to be a little more than a quarter of an inch. The temporary cuspid was thrust forward and toward the median line so as to occupy the place of the lateral incisor, and this tooth had taken its place almost directly behind its normal position. This condition of things produced rather an ugly deformity.

I have many times seen some displacement of the teeth by the roots of temporary teeth remaining in the gums between the permanent teeth, but such a *prop out* as was presented in this case is, I think, rare.

PROCEEDINGS OF SOCIETIES.

THE ODONTOLOGICAL SOCIETY OF WESTERN PENNSYLVANIA.

The twenty-ninth quarterly meeting of the Odontological Society of Western Pennsylvania was held at the office of Dr. W. B. Libbey, Washington, Pa., Tuesday afternoon and evening, September 18, 1888. Dr. J. G. Templeton, of Pittsburg, Pa., presiding. The meeting was extraordinarily interesting and instructive, owing greatly to the exertions of its president, who had procured and had present many little appliances, and partic-

ularly those of Dr. Geo. W. Melotte. His blow-pipe with soldering cushion, which, with the clamps for holding in position articles while being soldered, also the ease with which a pin may be inserted into any part of it, the melting cup and ingot mould attracted special attention. As a device for laboratory use this soldering cushion, with its several appliances and handle, which may be adjusted to any part of it, was considered to be far superior to anything of the kind ever brought to the notice of the profession.

The President also exhibited Melotte's soldering pliers, another ingenious device for holding small articles while soldering. The ones shown being made according to Dr. Melotte's original design, are better than those on the market, which are not made according to his instructions. There was also exhibited Melotte's set of twelve dies for striking up the grinding surfaces of gold crowns, all contained in a neat little box, and just the thing for which it is intended.

Dr. W. B. Libbey illustrated the use of copper amalgam, and bespoke for it a larger place in the future of dentistry, Dr. Crowe, of Carmichaeltown, agreeing with him.

Dr. H. W. Arthur filled a posterior approximal cavity in a right upper first bicuspid with crystalloid and No. 30 gold, explaining his method of operating as he progressed.

Dr. J. A. Libbey showed a matrice made from taggers tin, claiming for it easy preparation and adaptation to the approximal surfaces of the teeth. Its excellency was endorsed by Dr. Templeton, who also showed Dr. G. V. Black's method of making matrices from the ribbon saws bought at the depots, this matrix being made by taking a piece of the saw the proper width and of sufficient length, and cutting one edge concave the other convex, so as to preserve uniformity in width, then punch a hole in each end, through which pass a bolt with nut; adjust with concave edge next the gum, then tighten the bolt, when the matrix will be found closely fitting the neck of the tooth, while the convex edge will knuckle against the approximal surface of the adjoining tooth. The President further said that this is now his favorite matrix, and then exhibited a forceps he had devised for extracting lower wisdom teeth, the beaks of which are constructed to grasp a large portion of the surface of

the tooth, so that when force is applied the tooth will often slide upward. He also suggested an improvement by making the beaks slightly shorter and thinner and bending the handles a little upwards.

Dr. J. A. Libbey also exhibited Dr. Davis' novel device for separating the front teeth, said appliance being adjusted to the teeth of a member of the Society, which proved that it could be relied on to do what was claimed for it.

Dr. J. S. King showed several teeth very much exostosed, which, upon being ground in a lateral direction, showed cracks in the dentine. What caused them? Did they have any effect in producing the neuralgia which rendered the extraction necessary? Questions which were unanswered.

All the above exhibits and clinics were given under the charge of a Committee of Supervision, consisting of Drs. King and Smith.

When the Society reassembled for the evening session Dr. King, chairman of Committee of Supervision, made a report of all that had been witnessed during the afternoon, and asked for questions or criticisms, when all present entered heartily into a general discussion, showing that much interest had been taken with high appreciation of all the clinics presented or exhibited.

After this Dr. Arthur made a report from the Committee on Dental Literature, covering about forty pages, which was certainly a most valuable condensation of information contained in the different dental journals for the past three months. This feature of the Society is a most worthy one, as by this arrangement the different members of the committee peruse and report on different journals.

The Society adjourned to meet in Pittsburg on the second Tuesday of December, 1888.

W. E. VAN ORSDEL, *Secretary*.

SOME REMARKS ON PAPERS READ BEFORE THE OHIO STATE
DENTAL SOCIETY, ABSTRACTS OF WHICH WERE PUBLISHED
LAST MONTH.

(See Page 646.)

DISCUSSION OF DR. WRIGHT'S PAPER.

DR. BERRY: Dental colleges were commenced when our country was new. The Baltimore College was founded about half a century ago. Not long since, at a State dental society, a dentist, who did not know what he was talking about, said that the four professors of this college spent the entire time of the first session in teaching mechanical dentistry only; while, in fact, eminent in their professions for their talent and learning, they gave probably as thorough and able a course of lectures on the subjects of their chairs as has ever been given at any college since.

Five years after the founding of the Baltimore College, and only about fifty years after the Indian was driven out of this valley, the Ohio College of Dental Surgery was established. The teaching of the first term was very good; and, although there was no professorship of chemistry, Dr. Slack, one of the charter members of the Medical College of Ohio, gave on this subject, an able course of lectures.

As time passed, improvements were made in the course of instruction in the dental college, and they are now doing good work for the profession. But too short time of study and attendance at college is required. There is too much for the average student to learn, for him to master it, in two of the present college terms. Of course, as this need of more thorough acquirement is felt by our profession generally, the standard of attainment for graduation will be raised.

How many chemists are there in the medical and dental professions in Ohio? Are there twenty? I do not mean those who can tell the number of the elements, or describe oxygen, but who are well posted in chemical science. The dentist or physician who is not proficient in chemistry is very lame.

DR. BUTLER: * * * * *

The paper of Dr. Wright reminds me of one presented by Dr. Tomes, at the International Medical Congress, held in London in 1881; he placed himself in the same position that Professor Tomes did, in regard to medical dentistry; he spoke for the stu-

dents and I agree with him. There are those here, too, who know that I have been in favor of a dentist being also a graduate in medicine, and I hold that that position is perfectly right as stated; it is a valuable acquirement. Prof. Tomes said that education for dentistry was similar to the training of the young man that wanted to acquire facility as a musician in the handling or the manipulating of a musical instrument. If he ever becomes an expert on the piano, organ or violin, or on any of these instruments, he must do it in his younger days while he has full agility of his digital powers. Now in order to become a skillful dentist a young man must educate his hands and fingers. I once read a paper before this society on the education of the head and hands in order to become a dentist. Now, why has dentistry advanced so rapidly in its short life as a profession? In all medical schools where they have the highest status they provide for that. They have the greatest of clinical facilities in the hospital, in the amphitheater, where the student can have his didactics brought into practice, and it is here where the dental schools are pre-eminent in their mode of teaching, and those that have the best hospital or infirmary department, or clinical department, where all these different manipulations may be gone through under the directions of an able teacher in that department give best results. These are the best preparations for those who intend to practice dentistry, and the school that fails to provide for that thing in the very best possible manner is not doing what it ought to do, and the medical school that is turning out graduates year after year with very poor facilities in that direction fails to give us the best recruits for the profession.

You take any of these specialists and if they become expert manipulators you will find that they commenced their study in that particular direction in their younger days. You may look the world over in any department, and you will find that these men are those that commenced the study of their particular field in their younger days. As Dr. Wright has said, after they have acquired a dental education they have to study medicine in the different departments. This is all valuable, very valuable, they are indispensable in fact, and whether Mr. A., B. and C. acquire knowledge easily or through a hard field makes no difference. If you want to become a practitioner, for your

own honor and the honor of the profession, and obtain a prominent place among men you must expect that you have hard work before you, and you will not succeed unless you are energetic and set yourself to work with a determination that no man shall exceed you in your calling.

DR. FLETCHER: I was thinking of defending this chair spoken of in Dr. Wright's paper. I think he has put that chair in a very bad light. You probably have all had occasion to observe that dentistry has attained that position in which we might very easily give instruction on diseases of the teeth and mouth to many a professor in medicine. Those of you who have had any experience in that line know how many times patients having a diseased tooth may be prostrated for days, being attended by physicians who have little knowledge of how to relieve them from such pain. And for that reason, if no other, I would hold that a dental chair in a medical college would be a great benefit to both physician and patient, at least the physician should know when to send a patient to the dentist, when proper occasion requires.

I look upon the profession of dentistry as requiring some medical knowledge, and I think that students ought to have a broader education than they receive in any one college. In order to be successful in any line it is necessary at least to have some knowledge in other branches, and the more knowledge you have on any branch which bears directly or indirectly on the line of investigation which you are following, the better you are fitted for the work. By a surplus of knowledge we certainly do our work more easily and with greater benefit to our patients than by working up to our full capacity in all ordinary operations. I, for one, should be glad to see,—if it could be arranged in a practical way,—the standard of education elevated in the dental profession. I have no complaints to make of the dental colleges and their standing, but I do hold that a man can graduate at a dental college and not be fully competent to attend intelligently to every case which comes into his office. I look upon a dentist who has some knowledge of medicine as more competent to practice than without such knowledge, but I would not reverse the order of things. My idea of the education for the dentist would be that you should start out with the prac-

tice of dentistry, and not that you should start out to practice medicine, and then if you make a failure of that to try dentistry afterward. I would like to see the standard of our profession so elevated, not that we should keep out those who would like to come in, but that they should fully realize what it requires to be a successful practitioner. What I mean by a successful practitioner, is not in a financial point of view, but that we be so educated that when a case is brought before us we may fully comprehend what the case requires, and I should say, in order to do this, it is necessary that we should have some outside knowledge besides that we have received at any one college or from any one line of study.

DR. TAFT: In reference to the paper, the author seems to take it for granted that there is a general or at least a commonly entertained opinion, that it is important that a man seeking to enter the practice of dentistry should first graduate from a college of medicine. I do not think that such an opinion is general I know that a few person have entertained that opinion, but I know also that others have indicated some modifications within a reasonable period, therefore, it seems to me that it was hardly necessary that the paper should present that point so prominently, that there were people or members of the profession, and others perhaps entertaining the idea that every man who seeks to enter the dental profession ought first to be a graduate of medicine.

Now in regard to the amount of knowledge that ought to be possessed by one practicing dentistry, there perhaps would not be a great difference of opinion. Among intelligent men in a profession I think there would be a much nearer agreement of opinion than many suppose. How they should get that knowledge perhaps is a question of considerable importance, but this may be borne in mind, that the capabilities of different individuals are not alike, but, of course, in a matter of this kind, the proper course to pursue is that which best serves the largest number. Now I do not believe that one starting into preparation for the practice of dentistry, a young man of 18 or 20 years of age, ought to take up a regular course of medical instruction as fully as one who intends to make the practice of medicine his life-work. It seems to me that the better method is to train the manipulative facul-

ties, and that these should first have attention. During the period of life from 18 to 24, or perhaps earlier, the manipulative faculty will be more easily cultivated than at a later period of life. I am very fully impressed that this training should begin early, and should be taken up at the beginning of the work. The teaching of principles should in one sense follow the technical training. Some students are able to carry forward a number of branches with profit, while others will struggle and labor hard with two or three and some with one. The proper course is for such a person to be guided according to that which he is able to do, and let him accomplish that thoroughly as he proceeds. The graded system of study and work should be adopted by all colleges.

As to graduating first in medicine, I do not believe it the better course. Whether a man graduates in medicine after he has pursued a dental course rests with himself, and if he possess the knowledge it is not a matter of very great importance whether he has received the degree or not. A degree is simply a certificate of those who have been the teachers, and it only means that the person receiving the certificate has pursued a certain course of study up to a certain point.

Now, as to teaching dentistry in medical colleges—this was referred to—I do not understand that this is advocated by anybody. I do not know of any medical colleges that have dental chairs with a view of preparing a man to practice dentistry; it is possible that there may be some, but I do not know of any. The foundation branches of medicine should be studied by every dentist, but as to the best methods of doing this there may be differences of opinion. Of course every dental college should be organized so as to embrace all of these branches.

DR. SMITH: I am very happy to learn by Prof. Taft that there is not a great difference in regard to the method of educating dentists. I thought there was a wide difference. Of course I am a little modest in regard to expressing my views. I recall an address made by Prof. Hopkins, who was a very eminent educator, a man of education as a lecturer. He said that it was a waste of time to burden the education of the specialist at the time that he was fitting himself, and he said that he would rather know everything about something than something about everything. So it is with dentistry. You may know everything

about dentistry; make that a specialty in the beginning, and then if one has acquired that little, let him complete his education. Now I deny most emphatically that the dental colleges of to-day do not educate a man thoroughly. The public do not expect us to treat those diseases which have been referred to, with the diseases of the teeth. We refer those cases to the medical men; we recognize the disturbances, but when we pass that we are beyond our domain as dentists, of the recognized domain of the practitioner of to-day. The dentist ought to have a knowledge of biology and geology, he must have a knowledge of anatomy, and these branches are taught in dental schools; and it is taught just as thoroughly, in my estimation, as it is in the better class of medical colleges.

DR. GRAY: I wish to speak from a little experience in regard to the paper just read by Dr. Wright. It pleased me very much, as far as I am able to judge. I like the sentiment expressed in the paper. Physical training will help the muscle of the individual, and also that the mental training would benefit the individual, in any pursuit which he may follow. The old adage has it that education will aid any one in any pursuit or any profession they wish to follow. A great many young men when they graduate in dentistry, do not have the means to graduate in medicine. I know I had not, and so it is with a great many others. But I must say it would be a good thing, but we must do the best we can. A young practitioner, who has just graduated, generally is not rushed with business; and while I was sitting in my office after my graduation, I gave all my spare time to the study of medicine in order to enlighten myself in the profession. A young man has plenty of time to study the medical branches in his office during his leisure hours after he has gone through with the dental course. I may say from my experience in dentistry that we do not need a great deal of medical science. When I first started out in life I thought I would study the medical profession, and before attending lectures I read medicine a little and I found that to get to the top of the ladder I would have to be a life-time student, and I have found the same thing in dentistry.

DR. HARRISON: I am very much in favor of having a high aim in all callings of life, and while that is the case with the den-

tal colleges that we have in the United States for the education of dentists, and no better advantages in a medical college for the education of physicians, I do not think it is the wise plan to hold out before the students that it is necessary to go to a medical college after they get through with the dental college. I believe that you get all in a dental college that is necessary in the practice of dentistry. Let us not feel that we as dentists are below the medical profession. When I want to practice dentistry, I practice dentistry, and when I want to practice medicine, I practice medicine.

DISCUSSION OF DR. BETHEL'S PAPER

DR. SMITH: This is a subject of much importance to us, and it seems to me that the paper ought to receive some discussion. The failure of this operation at the cervical border depends very largely on the manipulation, it depends greatly on the failure in manipulation in making a close joint in the filling, and a great many times from the lack of finishing out the border. Dr. Bethel, if I understand him correctly, put the failure to a depression of the filling, and I understood him to say that you might have continuous pressure. You have, no doubt, pressure at that point in the manipulation of solids—gold—or silver and you might endanger the tissue and then follows the dissolving action of digestion. That idea has been set forth by Prof. Black, in referring to what he called erosion of the teeth. Why are teeth eroded, the surfaces removed, without the presence of the contamination from foreign matter, where teeth are thoroughly rubbed, yet we have this eroded surface, that has been spoken of by Dr. Black, arising from the marginal gum, from the stomach, and in that way dissolving the dentine. Whether he means after the filling has been introduced we have a continuous pressure, or whether the pressure is noticed at the time, thereby impairing the tissue, and making it more readily acted on by the solvent.

DR. TAFT: This is an important practical question; many operators tell us that they have very frequently failed at this point, and I presume nearly all, perhaps all, operators have as many failures at this point as anywhere else. The question has frequently been asked, Why is this? Some give one reason, others another. There are certain things, however, that will be plain to every one bearing upon the question. In the first place, the

cervical borders in approximate fillings are so situated that foreign substances are liable to lodge and be retained till decomposition takes place. It is difficult to keep the proximal surfaces of the teeth free from offensive accumulations. It is frequently a very difficult matter to have the cervical borders well protected, and especially if the cavity extends well toward the root of the tooth. And then the formation of a cervical wall is attended with difficulty. It is a difficult point to properly form definitely and well. In many instances it is necessary to work by reflected light in operating upon these borders. The cervical borders of proximate cavities are more or less difficult of access in the different steps of the operation of filling; this accounts for some defective work and failures.

A thorough examination of proximate fillings, as they are usually presented, will reveal quite a variety of defects. In some cases it will be found that the form of the cervical wall or border is very defective in form; either the decay not all removed, the edge left irregular and rough, or sharp at the edge, so that in the introduction of the filling it has been fractured. In many cases there is a failure in the adaptation and consolidation of the filling, and so the cavity is not protected. And again it will be found that the cavity has not been sufficiently filled to protect the tooth; and further it is often found that the cavity is over-filled, and the material permitted to over-lap on the tooth outside of the cavity, thus affording a ready lodgment for destructive agents, by which decay is soon set up. The indications are to avoid these defects by careful and skillful manipulation in the operation of filling.

The filling and tooth should be so dressed that a free and smooth space is made between the necks of the teeth, that they may be easily kept clean. Sometimes the enamel and cementum fails to cover the dentine at the neck of the tooth; such points are very subject to decay; filling a cavity of decay in the vicinity of such an exposed point, though perfectly done, will in no wise prevent the attack of decay; this may be in contact with the filling, or it may be at a distance from it. A diseased gum-margin is often the occasion of decay, especially on the proximate surfaces of the teeth, but the cervical portion of the lingual and buccal teeth are affected in the same way. Now if these various

points receive the attention that their importance demands and the treatment they should have, there will be less occasion for complaint about failures in proximate fillings.

DR. CLANCEY: If the tooth-substance is cut away under the gum, in my experience the filling will last very much longer, and this trouble is not likely to occur. The difficulty of the operation, the time it takes to make it, the obscure position of the cervical border, and the side walls of the cavity, leaving an edge towards its neck has much to do with the failure of this work. The filling is not perfectly done, if it is perfectly done it is as perfectly finished at the cervical border as the upper portions of the tooth, which are easy to get at. I think we will have fewer failures if we cut away so that the lower part of the teeth at the cervical borders do not come close together, and if the gold is placed in properly, and the margins of the side walls of the cavity are covered, and if too much force is not used, the tissue will not be broken down, and I do not see why they should not last as long as in any other place. If it is necessary, take more time. I do not see the necessity of so many failures, as we hear about, and as I have had myself and have seen coming from the hands of other operators.

DISCUSSION OF DR. MAXWELL'S PAPER.

DR. TAFT: * * * * It is important in treating periostitis, to note all irritants, and the influence that each may have on the diseased tissue. There is, perhaps, none requiring more special attention than salivary calculus. This, in many instances, occasions so much irritation that restoration can not be obtained while it is present.

The essayist's remarks about the removal of all foreign substances are very good. The dental surgeon or physician can do a great deal of good by cutting the bone in that way or even a soft tissue that is in that condition. Cut it with an instrument, with a bistoury, etc., the object is simply to remove diseased material.

DR. SMITH: I do not rise to discuss the question, but simply wish to state that there is one point, if I am correct, in the paper that I can not quite agree with, and that is that we do not have pericementitis without the death of the pulp. The pulp becomes inflamed, and it is possible we may have pericementitis.

When the pulp comes back to its normal state, the symptoms of pericementitis subside.

DR. MAXWELL: I think Dr. Smith misunderstood me, for that comes, as I said, from the poison escaping from the sloughing pulp which causes the inflammation of the tissue. I do not think that you have ever found that sort of inflammation without gas being present.

DR. CUSTER: There is one point that has not been touched upon and that is, that pericementitis is not always the result of a dead pulp. In my limited practice I have found that in nearly every case where there is pain there is a live pulp instead of a dead one. Now, if there is a continuity of tissue, that pathological condition will spread and it will produce inflammation of the membrane in the apical territory. I would like opinions of others on this point.

DR. TAFT: I think Dr. Custer in his remarks mistakes in one respect, and that is in which the disease would take place at the end of the root. It is true that occasionally with a live pulp there will be inflammation of the periosteum, but it is not often—at least I have not found it so—and it is not always when the disease occurs that it is found at the end of the root. In almost every instance when there is inflammation at the end of the root, the pulp is dead. I do not now remember to have seen a single instance in which that affliction was found at the end of the root, and the pulp was not dead. But this affection may start from a diseased gum by violence upon a tooth, and then it involves all of the membrane, covering the root. It may extend to the end of the root, but in such a case it will be no more severe there than elsewhere, except possibly in a certain kind of violence. A blow upon the end of a tooth may, of course, bruise the membrane at the end of the root more than elsewhere, and inflammation arise. And such inflammation may be more marked there than elsewhere. Only local treatment in the main was referred to, but little was said on general treatment, and perhaps we do not enough appreciate the importance of general treatment, the local being that generally employed, and nearly all cases require local treatment. In many cases quinine will operate very well, giving prompt relief.

DR. BELL: As I understand it, pericementitis is simply an

inflammation of the periosteum, and that there are a great many ways by which that trouble is brought about. It is brought about more often by mechanical means than by the poisonous material escaping from the pulp. In one instance, this trouble was brought about by holding a pencil. The trouble embraced four of the superior and inferior teeth. It has been brought about by carelessness on the part of the operator, allowing one tooth to remain unfinished. Systemic treatment for the trouble I do not believe is necessary except in very extreme cases. A great many times the cause is mistaken and teeth destroyed when it is entirely unnecessary.

CLINICS AND EXHIBITIONS BEFORE THE NORTHERN ILLINOIS DENTAL SOCIETY.

Dr. Geo. H. McCausey, of Janesville, Wis., exhibited the circulation of blood in the web of a frog's foot.

Dr. Louis Ottofy implanted a right lateral incisor tooth for Geo. Reedy, of Mt. Carroll, Ill. He used a four per cent. solution of cocaine as a local anæsthetic.

Dr. James W. Cormany filled a cavity in a right lateral incisor with gold cylinders, impacted with the electric mallet. This filling was finished with cohesive electric gold.

Dr. A. W. McCandless and others administered nitrous oxide to several ladies and gentlemen, and extracted teeth from different locations in the mouth.

Dr. J. F. Davenport exhibited the Belding motor attached to a dental lathe.

Dr. G. W. Dennis, of La Salle, set an all porcelain crown. A gold tube was first cemented into the root. The tooth and pin were set in cement, but the joint between the crown and root was made with a thin layer of gutta-percha.

Dr. C. J. Underwood exhibited casts of a mouth with four lateral incisors instead of two. These teeth were malformed and after one of the laterals was extracted the central incisor was extracted and transplanted to the socket of the lateral, which made the mouth very presentable.

Dr. T. W. Beckwith filled a cavity in a lower second molar tooth with Dr. W. B. Ames' copper amalgam.

Dr. A. N. Stone brought two sizes of Bunsen burners modified by the mechanical department of the Elgin watch works. These burners give a delicate flame for light crown work.

Dr. E. H. Allen, of Freeport, cast an aluminum plate with the Carroll apparatus for a practical case. This was done in a manner that showed its great practicability.

Mr. Stevens exhibited an instrument case said to have been designed by Drs. H. J. McKellops and C. J. Tibbets. It is manufactured by Mr. Stevens, of Rockford, and the price is \$15.

Dr. T. B. Fletcher, of Portage, Wis., sent his improved matrix, which is designed to hug the neck of the tooth. Dr. Fuller's cabinet and Dr. Gilmer's improved crown were also exhibited.

THE DENTAL REVIEW.

Devoted to the Advancement of Dental Science.

PUBLISHED MONTHLY.

EDITOR: A. W. HARLAN, M.D., D.D.S.

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LOUIS OTTOFY, D.D.S.

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EXCISION OF THE ENDS OF ROOTS OF TEETH AS A STEP IN THE TREATMENT OF CHRONIC ALVEOLAR ABSCESS.

It is something more than a dozen years since we began this practice in obstinate cases of chronic abscess with fistulous openings. The indications for such surgical procedures are about as follows: A pulpless tooth with an abscess leading from its apex to the gum is opened through the cavity of decay or otherwise, depending somewhat on the condition of the crown—filling or fillings closing the cavity or no decay being present—the contents of the pulp-chamber and canal being removed, the dentine is disinfected and the chosen medicament pumped through the root and fistulous tract. The root is then filled, either temporarily or permanently. After the lapse of two weeks or a month it is observed that the fistula does not close. Medicines are again injected through the root and it is again stopped, this time permanently. A few weeks may be allowed to pass by and the discharge is seen to be lessened but does not cease. An examination of the end of the root with a delicate smooth probe, through the fistula, discloses the fact that the apex is roughened and partially, if not completely denuded of the peridental membrane. The indications are for excision of the apex. The examination may show that a serumal deposit has partially, if not wholly, encircled the apex. If this can not be removed without excising the apex the abscess will not heal. At other times we may find that absorption of the root has taken place within a short distance from the apex, but not far enough from the end of the

root to endanger the future usefulness of the tooth, should the root be excised at that point.

All of the above may be considered as indications for the excision of the apices of roots. One other condition frequently found to be the cause of the non-healing of abscesses is the incomplete growth of the root at the time the pulp died or was destroyed. In all such cases the condition should have been discovered at the time of filling the root, but our observations have been that they are not always thoroughly examined, even by the best dental surgeons. The end of the root will be found incompletely filled, even with lead or gutta-percha. The ends of such roots should be excised.

It would seem needless to describe the method of excising a root, but a few words may not be out of place. If a tortuous fistula leads from the root to the gum surface, a smooth probe may be passed from the mouth of the fistula to the opening through the alveolar process, and this will act as a good director for the knife in reaching the exact location where the process is to be cut through in order to reach the affected root. The locality of the root to be operated on will indicate the method of opening the gum to easily reach the root. If it be an upper or lower tooth, our favorite operation is the crescentic cut modified thus: \smile for the upper, \frown for the lower. A tenaculum may be passed through the severed gum, and it is held by the assistant with one hand, having the other free to hand the operator any needed instrument, etc. The incision in the gum is made at one sweep of the instrument. As soon as the slight bleeding has subsided the opening in the alveolar process is enlarged and the debris washed away with 1-1000 bichloride of mercury or a five per cent. solution of resorcin.

When the root is uncovered sufficiently it is excised with a long, slender headed forceps, or cut off with a safe-end fissure drill, detached and removed, and any inequality of the end of the root is rounded with a stone-cut gold finishing bur. All instruments used, from beginning to finish, are disinfected before using. The wound is dressed with iodoform, iodol or hydronaphthol and if it is very extensive, hydronaphthol or borated cotton may be used, to be packed into it for the first day or two until healing begins, as it does from the bottom of the opening. Generally a

dressings will suffice without the packing of cotton, jute or any other foreign substance. If it is deemed necessary, a stitch may be taken in the gum, or even two. Usually in the upper maxillary region this is unnecessary. In the lower it may be called for, but can usually be dispensed with.

Wounds of this character heal very rapidly, and are really less painful than would be supposed by one who has not undergone such an operation. Many fistulæ open opposite the end of the affected root, and the operation of excising is very insignificant and no special directions are needed by the most inexperienced dentist. It may be as well to speak of one other class of teeth whose usefulness may be prolonged by excision of a root. The palatal roots of molar teeth in some mouths are found completely denuded of the gum and alveolar process, even to the apex of the roots. Such teeth, while they may not be subject to abscess, are frequently troublesome to their possessors. We have found that excision of the root in such cases has proved of great benefit in retaining the teeth in the mouth for a lengthened period. The roots should be excised obliquely and not transversely. By so operating the tongue is unconscious of them and foreign particles do not lodge about them.

THE INFLUENCE OF TOBACCO-SMOKE UPON INFECTIVE MICRO-ORGANISMS.

That tobacco-smoke has a positive tendency to retard the progress of caries of the teeth, has always been acknowledged by dentists. The fervency of the acknowledgement, however, is tempered by the moral opinion of the observer. If a dentist considers the habit of smoking a filthy, unpleasant and unhealthy one, it would seem hardly consistent to recommend tobacco smoking as a preventive of caries, even though its efficacy as a retarder of caries may be acknowledged. Until but a few years ago there was no knowledge of the causes which led to the favorable effects of tobacco-smoke on the teeth, though the fact was generally noticed and admitted. It is now reasonably certain that micro-organisms, or their products, play an important part in the progress of decay of the teeth, and it is also believed

that destruction of the life of micro-organisms leads to a cessation of decay. The arrest of their activity or their destruction decreases the progress of caries.

The action of tobacco-smoke on certain pathogenic micro-organisms has been recently studied by Dr. Vincenzo Tassarino, of the University of Pisa. "He devised an apparatus consisting of two funnels placed with their mouths opposed, and sealed with paraffine. To each small end of the funnel, tubes were attached, suitably arranged so that a cigar could be placed in one end, while the bacteriological smoker inspired at the other. The smoke was thus drawn into the large space made by the funnels, in which was a plate with various cultures of micro-organisms—control cultures were also used. The microbes were subjected to the smoke for from thirty to thirty-five minutes, during which time from $3\frac{1}{4}$ to $4\frac{1}{2}$ grammes of tobacco were used. The micro-organisms tested were the spirillum cholerae Asiaticæ, spirillum, Frinkler and Prior, bacillus anthracis, bacillus typhi abdominalis, bacilli pneumoniae, staphylococcus pyogenus aureus, and bacillus prodigiosus. The kinds of tobacco used were the large Virginia cigars, the large Cavour cigars the small Cavour cigars, the best cigarette tobacco."

"The results show that tobacco-smoke has the effect of preventing the development of some micro-organisms entirely, and of retarding that of others. The Virginia cigars seemed to have the most powerful effect, while cigarette smoke had only a retarding influence, and did not entirely check the growth of any form."

These experiments seem to prove, to some extent at least, that tobacco-smoke, if a retarder of the growth of microbes, must, in the light of our present knowledge, be a retarder of decay of the teeth. We trust that more conclusive experiments made directly upon the teeth, will lead to a definite and reliable solution of the question.

THE CONTENTS OF VOLUME II.

At the close of the last volume the DENTAL REVIEW made a departure from the custom of dental journalism by adding an extensive and perfect table of contents and index. We were prompted to do so by having experienced difficulty

in looking through the dental journals in quest of any special subject. The customary table of contents or brief index usually offered no clue to the article sought.

It is with pleasure that we noticed the appreciation of the profession, as shown by the numerous letters received and by favorable comments before dental societies. Dr. J. D. Moody, of Mendota, Illinois, in a paper read before the Illinois State Dental Society, in May last, said: "The lamentable lack of systematic indexing of society proceedings in our dental journals, with the single exception of the DENTAL REVIEW, has prevented my hunting up everything on this subject."

This year we have made both the table of contents and index, if anything, even more perfect than last year, and we trust that other dental journals may follow our example, and make it unnecessary, when we wish to look up the literature of any particular subject, to wade through each and every number.

Throughout Volume III we will follow our practice in the past, of presenting on the inside of the cover a table of contents which virtually answers the purpose of a monthly index, and which, at the end of the volume, will be replaced by a similar table of contents and index as the one accompanying this volume, thus enabling the busy practitioner, student or writer to find any one subject in one place in each volume, instead of having to look through the tables of contents or the indices of twelve separate numbers.

CHICAGO DENTAL SOCIETY.

We present below almost the complete programme of the Chicago Dental Society Anniversary Meeting. We hope to see a large attendance, particularly from the East, West and South, as it is the first attempt to hold a mid-winter meeting in Chicago. The Grand Pacific Hotel will be the headquarters. Rooms with board above the parlor floor have been reduced to \$3 per day. Rooms with bath will be slightly higher than above.

The 25th anniversary of the Chicago Dental Society will be celebrated by a meeting, to be held in Chicago, February 5, 6 and 7, 1889, at the Grand Pacific Hotel, commencing promptly

at ten o'clock Tuesday morning, February 5. The following papers will be presented:

By C. P. Pruyn, of Chicago, "A study of the effects of cocaine upon man, and some of the lower animals."

By A. H. Thompson, of Topeka, Kansas, "Gum-colored porcelain fillings."

By J. J. R. Patrick, of Belleville, Ill., "The study of prehistoric remains, and its relation to dentistry,"

By J. H. Martindale, of Minneapolis, "Caries and necrosis in their relation to practical dentistry."

By L. W. Comstock, of Indianapolis, Ind., "Artistic methods in prosthetic dentistry, illustrated by large cartoons."

By T. E. Weeks, of Minneapolis, "Paper on Obtundents."

By R. R. Andrews, of Cambridge, Mass., "A paper on the development of the teeth, the formation of dentine and its appearance in health and decay. The paper will be illustrated by photo-micrographs projected on the screen by means of the oxy-hydrogen lantern. Many of the photographs were made for this demonstration; others are from Dr. W. D. Miller's beautiful sections of natural and artificial decay."

By G. V. Black, of Chicago, "Antiseptics."

Clinics will be given at the infirmary of the Chicago College of Dental Surgery on Wednesday and Thursday mornings commencing at nine o'clock.

A. H. Thompson, of Topeka—Gum-colored porcelain filling.

J. Warren Wick, of St. Louis—on his method of gold filling.

T. E. Weeks, of Minneapolis—setting of Logan crown with gold attachment, showing original method of investment for soldering.

E. H. Allen, of Freeport, Ill.—gold filling with electric mallet.

C. S. Case, of Jackson, Mich.—demonstrating his method of making artificial vela for cleft palate, provided a subject can be secured.

E. T. Darby, of Philadelphia—using crystal gold and matrix.

S. G. Perry, of New York—demonstrating the application of Perry's separators, and the Weber-Perry engine and mallet.

J. W. Wassall, of Chicago—demonstrating root filling with chloro-percha and gold points, also the use of McKellops platinum gold broaches.

C. Thomas, of Des Moines, Iowa—porcelain fillings.

M. E. Smith, of Chicago—demonstrating the use of the Snow and Lewis automatic plugger.

E. M. S. Fernandez, of Chicago—demonstrating his method of filling with the oxy-phosphates and oxy-chlorides.

J. N. Crouse, of Chicago—demonstrating the use of crystalloid gold.

F. Peabody, of Louisville, Ky.—filling root canals with lead points.

D. F. McGraw, of Mankato—"Brief paper and clinic on the obtunding of sensitive dentine and controlling of peridental inflammation by electrolysis."

T. L. Gilmer, of Quincy, Ill.—new gold crown, telescoped over platinum band. Also combination crown of platinum and Weston's metal or combination gold, porcelain and Weston's metal.

J. B. Vernon, of St. Louis—bridge work.

J. G. Reid, of Chicago—copper amalgam.

C. W. Lewis, of Chicago—Herbst method.

C. N. Johnson, of Chicago—gold filling.

E. A. Royce, of Chicago—gold filling, using Abbey's non-cohesive foil in cylinders.

Louis Ottogy, of Chicago—implantation.

BAD HABITS AND GOOD RESOLUTIONS.

We are nearing the close of another year, and are ready to cast up accounts to see on which side the balance sheet stands. Has the year been profitable, in scientific results equal to our expectations, or successful from a financial standpoint? These questions can be easily answered if the books have been well kept; but there are other questions of as great importance that may be forgotten, unless the first day of January calls to our mind the old custom of "turning over a new leaf." Then come such questions as these: What have I done that were best left undone, or, what duties have I neglected, what opportunities have I lost? One of the worst habits for a dentist to fall into is the habit of smoking or drinking during office hours, and the young professional man, if only from a financial point of view, can not

afford to continue a habit that will surely prove a great obstacle in the acquirement of a position and practice, and the old practitioner should have the comfort of his patients too much at heart to persist in such habits.

A bad habit is procrastination. Correspondence should never be neglected, especially that of a fellow practitioner. Tardiness in keeping appointments should not become a habit. As an officer of one of the numerous societies, the question of neglected duties calls for immediate action.

The final interrogation, neglected opportunities — what of them? Is the mind broader, and the mental vision increased by the labors of the past year, or has business and other causes prevented attendance at society meetings, the studying of new ideas and theories, or even the reading of periodical literature? These are but a few of the questions that require careful consideration at this time, and they are jotted down to stir up a “healthy state of thinking” so that the New Year may bring forth resolutions for better things during 1889. In making new resolutions, do not forget that the pages of the DENTAL REVIEW are at your disposal if you have any inclination to write, but if you do not write, we hope to enroll you as a reader.

THE DENTAL REVIEW.

With this number of the DENTAL REVIEW the volume for 1888 is ended. During the past two years and over we have presented, from month to month, matters of interest—as we have believed—to all classes of dentists, and have endeavored, as far as possible, to present matter that was new and fresh and not devoid of value to our readers. The experience gained from conducting a journal will, we think, make the volume for 1889 still better than that of 1888. In that belief we ask for a renewal of subscriptions and your friendly co-operation in the securing of new readers.

CHANGE OF PUBLISHER.

Beginning with the January number, the DENTAL REVIEW will be published for the DENTAL REVIEW COMPANY by H. D. Justi, Chicago. The ownership of the journal, the editorial management and policy of the REVIEW will remain as it has from the beginning—in the hands of the editor-in-chief and his associates. All business communications relating to subscriptions and advertising should be addressed to H. D. Justi, Chicago. Communications intended for the editor may be addressed in the care of the publisher.

DOMESTIC CORRESPONDENCE.

THE NATIONAL ASSOCIATION OF DENTAL EXAMINERS AND THE
DENTAL DEPARTMENT OF THE UNIVERSITY OF MARYLAND.

ORANGE, N. J., Nov. 23, 1888.

To the Editor of the Dental Review:

DEAR SIR—As you may have noticed, Dr. Gorgas, in the *American Journal of Dental Science* for October, has neglected to publish my reply to his letter of November 1, thereby leaving me in a bad light. Will you be kind enough to republish his letter and my reply to the same, and much oblige, Yours truly,

FRED A. LEVY, Secretary.

UNIVERSITY OF MARYLAND, DENTAL DEPARTMENT.

Ferdinand J. S. Gorgas, M. D., D. D. S., Dean.

845 N. EUTAW ST., BALTIMORE, Nov. 1, 1888.

Dr. Fred A. Levy, Sec'y National Association of Dental Examiners:

DEAR SIR—I desire to acknowledge the receipt this day of a printed copy of the proceedings of the seventh annual meeting of the National Association of Dental Examiners, and, in return, to send you enclosed circulars of the correspondence between Dr. Waters, Dr. G. F. S. Wright, and myself, and also a letter from Dr. W. C. Wardlaw, of the Georgia State Board of Dental Examiners, who, with Dr. S. B. Barfield, represented said board at the Louisville meeting of your association. According to Dr. Wardlaw's letter the list of dental schools was reviewed and re-reviewed two or three times, and finally disposed of, with no

objections to the University of Maryland Dental Department, which, as Dr. Wright also states, was "*passed without objection or comment of any kind.*"

In your report of the proceedings (according to the printed pamphlet received to-day), it appears that in the last session of your association, at which there was a very much reduced attendance from the *seventeen* original representatives, but at which session the State Board of Georgia *was* represented, if that of South Carolina was not, the list of dental schools was again revised, and, according to the number published in your printed proceedings, the University of Maryland Dental Department was omitted.

Is not such a record of your proceedings strangely incorrect, as Dr. G. F. S. Wright, a copy of whose letter I send you, was, according to your report, one of the committee appointed to prepare a list of dental colleges which your association would recommend to the various State boards?

Does not Dr. W. C. Wardlaw state that although he was not present at the last session, yet he understood and was "told that nothing had been done but the election of officers and routine business?"

Yet your report alleges that the list of colleges was again (notwithstanding the many previous reviews) "referred back to the committee to be revised, and was again presented to the association, was amended and accepted."

The conclusion I arrive at, from all the testimony given in the letters of Drs. Wright and Wardlaw, who declare that the University of Maryland Dental Department was not omitted from the lists of dental colleges whose diplomas were to be recommended to the various State boards (the former gentleman being a member of the committees appointed to prepare the said list of dental colleges), are that you have either confounded the proceedings of the second session of your association with those of the third session, unintentionally omitting the name of our department by reason of such mistake, or that advantage was taken of the absence of several of the representatives who were present at the former session to injure, without any just cause, our institution; for, if it is true, which I greatly doubt, that such action was taken at your last session, it could not have been done

unanimously at the previous sessions, as the letters of both Dr. Wright and Dr. Wardlaw proved. Respectfully, etc.,

FERDINAND J. S. GORGAS,
Dean of University of Maryland, Dental Department.

THE NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

Organized August 6, 1883.

President, T. S. Waters, Baltimore, Md.; Vice President, S. T. Kirk, Kokomo, Ind.; Secretary and Treasurer, Fred A. Levy, Orange, N. J.

ORANGE, N. J., Nov. 5, 1888.

Ferdinand J. S. Gorgas, M.D., D.D.S., Dean, Baltimore, Md.:

DEAR SIR—Yours of November 1, enclosing circulars containing correspondence with Drs. Waters, Wright and Wardlaw, received, and in reply I would state:

1. That I have no record of the attendance of Dr. Wardlaw, and it appears from his own statement that he was not present at the session at which was passed the resolution complained of by you.

2. Dr. Wright is in error relative to the proceedings of the National Association of Dental Examiners when he states that your college "passed without objection or comment of any kind," in this important particular: that there was opposition to the insertion of the name of your college among those "whose diplomas the National Association of Dental Examiners recommended the various State boards to accept instead of an examination," or it would not have been dropped from the revised list presented by the committee. For particulars of the passage of this resolution I refer you to page 4 of the printed proceedings of the association, from which it appears that "the list of colleges presented and accepted at the last meeting was reconsidered. The list was then referred back to the committee to be revised, and was again presented to the association, was amended and accepted," omitting the name of your college.

3. That this report of the committee, appointed for that purpose, consisting of Drs. Wright, Rawls and Levy, was signed by each of them, and, in that form, presented to the association. This original report, omitting the name of your college, and signed by Dr. Wright, with the others mentioned, I have in my possession, which you can see upon application.

4. At the time of the passage of this resolution, as appears upon page 4 of the proceedings mentioned, the roll call showed ten States represented.

5. The printed report of the proceedings of the association sent you are correct in every particular, the assertions of Dr. Wardlaw (who was not present), and those of Dr. Wright (who concurred in the resolution dropping your college), to the contrary notwithstanding. As you will see, the conclusions which you arrive at, from what you choose to term the testimony in your possession, are totally incorrect, inasmuch as the name of your college was intentionally omitted from the list of the dental colleges which the National Association recommended to the various State boards, whose diplomas might be accepted instead of an examination.

There has been no confusion upon my part in the matter; upon the contrary, I have been exceedingly particular, and know that there has been no mistake whatever.

Any other or further information which you may desire I shall be pleased to furnish you. Very truly yours,

FRED A. LEVY, Secretary.

POINTS FROM THE SUMMER MEETINGS.

New York, December 6, 1888.

To the Editor of the Dental Review: Dear Sir: The subject of Dental Patents is one which I found agitating the minds of dentists at all the meetings I attended during the summer. I do not mean to argue this subject at all, but there occurred a trifling incident at the union meeting at Boston, the recent report of which is in one of the journals, to which I can not refrain from alluding.

In the room given up to the exhibition of dental goods there was the greatest display ever seen since the Centennial Exposition at Philadelphia. In one corner, about a small table, there was always a large crowd and an interested one. Behind the table sat a gentleman, and on the table a various assortment of instruments from burs to chisels, and even sharpened nails. All of these possessed edges as keen as razors. What of it? Ah! Thereby hangs a tale. The Doctor explained that by a process discovered by himself anyone might sharpen any steel to such

keenness: he also announced that one of our largest manufacturers had offered \$1,000 for the secret. This the generous dentist refused, so great was his abhorrence of anything so unprofessional as selling what might be of value to his brother practitioners. He promised to expound the secret for us before the close of the meeting, and all of us rubbed our hands and thought of the song "For he's a jolly good fellow, etc." (with emphasis on the "etc.," as will be seen). The gentleman kept his word and expounded. I quote.

"The method which I shall show you to-day may seem very simple to most of you." (Just so.) "It however did not come to me at once, but is the result of a long series of experiments, and is one I have now practiced for a number of years." (Note that.) "My method is simply to use emery paper of different degrees of fineness, running from 0 to 0000, according to the fineness of the edge I wish to produce. For small instruments I cut disks from this paper, similar to those for polishing fillings. I first place on the mandrel a disk cut from thin metal, on this a disk of pasteboard, thin, and on this a disk of emery paper. The secret of the process is always to hold the instrument at the same angle, and to run the disk away from the edge, and as soon as the feather-edge appears to use finer and finer emery." (Great applause from the audience), and there being no band to render "Lo, the conquering hero ——" one man beat a rat-tat-tat-too with his cane—the while I smiled in the knowledge that I knew a secret which, however, I would not "give the profession" just then. I will however do so, if the congregation will join in the chorus.

Oh! This is the way they sharpen tools, they sharpen tools,
they sharpen tools,

Oh! This is the way they sharpen tools, at S. S. White's, my
dear; •

And that is the way they sharpen tools, they sharpen tools,
they sharpen tools,

And that is the way they sharpen tools now almost every-
where.

Jesting aside, I never witnessed such a farce in my life. A man to get up at a meeting of dentists, supposed to be educated in all lines pertaining to their profession, and tell them that steel

can be sharpened on emery wheels, a trick which has been known and practiced in machine shops since machine shops were! Then when the great secret (for which he refused a thousand dollars) is "given to the profession," the president alluded to it in these soul-stirring words: "Three gentlemen, Dr. ———, etc., have, from pride in their manhood, and from the love of their profession which was in their hearts, come forward and presented to the profession freely the results of their investigations—results which sold to patent companies, or held as trade secrets, etc., etc."

The societies then unanimously passed some gilt-edged resolutions of thanks and ordered them handsomely engrossed, and presented to the generous gentlemen, who, by the way, was so generous that he admits he kept his valuable secret (?) a number of years, and who, to my knowledge, has an office in the adjoining room to that of one of our most prominent men, and never had the feeling of professional brotherhood sufficiently strong in him to open the communicating door and communicate his valuable secret to his next neighbor.

I think we should be too shrewd to be so humbugged, and yet I see the gentleman is going next week to Philadelphia to tell his secret again to the Odontological—and get more thanks—for that which he never could have sold. Let us stop all this nonsense and give our thanks where there is more merit.

At the meeting at Asbury Park this summer the fact that clinics are valuable, in that they teach men who are not sufficiently taught by their Alma Mater, was well exemplified by, a little incident which I chanced to note. A gentleman was filling a tooth with gold, and occasionally used his chip blower to remove chips or scraps of gold from his work. An elderly D.D.S. stood by much interested, and suddenly blurted out:

"What have you in that, doctor?"

"In what?" asked the clinician mystified.

"In that rubber ball! I have been wondering what it is you blow on the filling every little while!"

"Why, there is nothing in it but air. I simply blow the scraps out of the way."

"Well!! I am glad I asked. *I thought you had some sticky stuff in it and used it that way to make the gold stick better!*"

I have heard that there is a good opening for American dentists abroad, and I think we could afford to have some go over.

In a former letter I told some of the little points I learned from Dr. VanWoert at a clinic held in his office. Since writing that I had the pleasure of hearing him read a paper before the Central Society of New Jersey, and gained a point which has been invaluable. I am reminded here that this meeting was held at the office of Dr. Osmun, the secretary of the Society, and before closing this I will give you one or two valuable points gleaned from him about copper amalgam.

Dr. VanWoert spoke about his crown, specially, but in the course of his remarks mentioned that he occasionally fastens a band to a root by a gold screw, at the margin of the gum, and that induced him to say a few words about the screws and taps which he uses. (They can be obtained at S. S. White's.)

Suppose a case where the front teeth have been much worn away by abrasion. In such a case two factors are involved in the destruction of the organs. First, *power* in masticating (or a habit of grinding the teeth at night), and second, deficient calcific strength to resist. Once realize the power which wore away enamel—no decay enters into this condition—and see how little chance there is of building gold to these cusps which will abate the destruction. Moreover, in order to do this we must begin by cutting into tooth substance, often difficult on account of the proximity of the pulp. Dr. VanWoert proceeds as follows: The dam being thrown over the teeth to be operated on, the top of one is ground with corundum sufficiently to allow a piece of gold plate (20 K. 18 G.) to rest between the occlusion. A piece of this plate larger than sufficient to cover the end of the tooth, is cut, and after annealing burnished into the irregularities of the surface, until an accurate cap is fashioned a little large over all edges. It is next held firmly in position whilst a hole is drilled and tapped through it, and into the tooth. The gold screw is then turned into, but not through the gold cap, and the under side being smeared with thin oxyphosphate, the cap again is placed in position and the screw screwed into the tapped hole in the tooth. Sufficient time is allowed for the setting of the cement, during which a second tooth may be pre-

pared. As soon as the cement is hard two or three more holes are drilled and tapped and screws placed.

The overhanging edges are trimmed away with corundum, care being taken that the stone revolves away from the edge so that a bur of the gold is turned over the edge, making a perfect joint. Sometimes two occluding teeth on each side of the mouth will save a whole denture if thus treated. If it is deemed advisable to cap the molars and the surfaces are quite irregular even after stoning away, burnish a piece of platinum over the irregularities and flow gold plate over it. This makes a close-fitting and very durable cap for this purpose. It should be set in the same way.

The Central Society of New Jersey is undoubtedly the most profitable in this vicinity to the student. I mean the graduated student (a man who ceases to be a student when he is graduated ought to cease to be). Its meetings are always well attended, and though held in Newark, New York men are always present. This is largely due to the untiring energy of Dr. Watkins, as he is the man who obtains for his society the excellent papers it offers. However, it is of Dr. Osmun I mean to speak this time. He is one of our self-made men, and had an excellent maker, if one may judge by the result. Of late he has paid great attention to copper amalgam. He says he has used over a hundred ounces, and kept tabulated accounts of his operations and results. From this it will be seen that what he says on the subject is authority.

I will give you the main points, which are two in number. Obtain an amalgam which does not contain an excess of mercury, heat slowly, and at the first sign of the appearance of mercury drop into a glass mortar, and work it into a mass. This will at first appear granular or as a powder; in this condition, *without the addition of mercury*, it must be placed in the palm and "worked" until it becomes quite plastic. Many will doubt that this will happen. Try it and be convinced. The amalgam treated in this way is quick setting and can often be polished at the first sitting. This, however, should not be final. Dr. Osmun has made a discovery. The great objection to copper amalgam is that it will become blackened. The rule is not invariable, but in a majority of cases if the patient can be made to return in

ten days or more from the date of inserting the filling, the surface may then be thoroughly polished, and subsequently does not become black.

In a short time we may expect a long and valuable paper, on this subject from Dr. Osmun, giving the results of his observations, and then we shall have little more to learn about the copper amalgam.

ODONTO BLAST.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON—IMMEDIATE ROOT FILLING.

To the Editor of the Dental Review :

DEAR SIR—The title of your able and pointed editorial in the October number of the REVIEW might with propriety be used as the text for another article from your pen, evidenced by the necessity, as it appears on page 621 of the same number, "Due to Immediate Root Filling?"

In the first place, with all practitioners of any experience, either dental or medical, the evidence of patients is always taken with the usual amount of salt. This is but reasonable, on account of the biased or perverted nature of their statements as to the previous or present condition of the case; especially is this so in all cases presenting exalted or acute symptoms to the patient. This necessitates upon the part of the dentist a strict adherence to one of the fundamental principles of theoretical dentistry, viz.: an intelligent history of the case. Should this not be obtainable from the patient,—and in many instances it is not,—it will have to be made up from the objective symptoms present when the patient is under the trained eye of the expert. Had this course been pursued we should not have to read such a disjointed narrative, with an imputative query as a frontispiece, backed up by a following of unscientific statements that makes the contribution valueless, and even worse, implying, as it does, the terrible possibilities of a course of practice that, in careful hands, carrying out the behest of ripe judgment, is capable of the best possible results to both patient and operator.

In the case under consideration we have no history of the

condition of the tooth before filling, or even whether the roots were filled at all, or whether antral trouble—which, judging from the description of the case, was the real cause of trouble, possibly induced by dental irritation primarily—existed before the tooth was filled or not; in fact, the absence of anything like consecutive data upon which to base a theory, as in this case, should be a hint strong enough to suggest to the dental profession to adhere as closely as possible to facts, and to present those in a consecutive manner. There is too great a tendency in the dental profession to make off-hand statements, possessing more or less a roseate hue, and to communicate through the medium of our dental literature statements founded upon cases in practice, methods, formulæ, etc., in a more or less slipshod, haphazard manner. This should not be, for, having made rapid strides in practical matters, dentists are under obligations to their profession that its literature should be worthy of its high name and calling.

Mr. Editor, please let us hear from you on the subject.

Yours truly,

London, Eng.

W. MITCHELL, D. D. S.

DENTISTRY IN ITALY—LETTER FROM ROME.

To the Editor of the Dental Review :

DEAR SIR—You may think it a comparatively easy task for an American dentist residing in the kingdom of Italy to describe the real status of dentistry in this country. In one sense it is very easy, for it may all be summed up in these few words: "More than fifty years behind dentistry in America." The question has often forced itself on me, while looking after Etruscan relics of civilization, "Have the Italians of to-day as conservative an idea of dentistry as the Etruscans had two thousand five hundred years ago?" I hope to be able to answer this interrogation satisfactorily some future day. The non-resident will naturally inquire, why this state of backwardness in one of the learned professions, in this age, in the land of Columbus, Gallileo, Galvan, Michel Angelo, Leonardo, Victor Emanuel, Cavour, and a host of other great and wise men? History tells the story, and compels us to wonder that Italy, Phœnix-like,

should arise from a down-trodden, disunited land to become in so few years one of the "Triple Alliance" which commands the peace of Europe. To clearly understand the present state of things we must recall the fact that it is only a few years since Italy was divided into little kingdoms, dukedoms and the Papal States, and overrun with Austrian and French soldiers. It was not possible in this divided, discontented, warring state for the learned professions to flourish or keep pace with the spirit of the age. Liberty is one of the prime factors in scientific progress, and to-day Italy is one of the freest countries in Europe; hence the wonderful strides made of late years by the medical profession. But dentistry has as yet made only a few spasmodic efforts towards unity as a learned scientific body, so far as I can learn. At least there is a lack of courage or self-confidence in the Italian dental profession to make the effort to raise dentistry to the high plane of American dentistry as a recognized specialty of the art and science of medicine and surgery.

Other nations of Europe have recognized the American advance and have established colleges to properly qualify young men in dentistry; but Italy, one of the oldest and still one of the youngest among the nations, with the oldest and largest universities, has to be reminded that dentistry is one of the learned professions, and as necessary to human comfort and comeliness as is the oculist or aurist. In the days of the Cæsars we are told that "the profession of medicine was often entered without any further qualification than an agreeable manner and a supply of effrontery." A similar state of things exists to-day in this kingdom in the dental profession. There is a law to prevent quacks and incompetent persons from practicing dentistry in Italy, but in many provinces it is practically a dead letter. Barbers, shoemakers and mechanics become dentists as by magic.

One of my servants, whom I discharged for dishonesty and incompetency, went to one of the university cities, and after a remarkably short stay (almost as short as foreign dental students spend in Philadelphia), procured an Italian dental diploma and went to one of the fairest cities of Italy and announced himself as an "American dentist and my former assistant." Unless the authorities bestir themselves Italy will become the dental penal colony for the bogus diploma dentists of all other countries.

There are good, earnest men among the Italian dentists, but as a rule it is difficult for a foreign dentist to see far on their stage of action, as the drop curtain is down. Judging from the patients we see daily, the average Italian dentist extracts all aching, abscessed and badly decayed teeth, and inserts in their place a rubber plate which covers the whole palate. Wholesale extraction for neuralgia and irregularities is common. It must not be understood that such practice is confined to Italian dentists, for some of the most flagrant cases of malpractice I have ever seen came from the hands of so-called American dentists who hold bogus D. D. S. diplomas or have Philadelphia dental diplomas which they received after a three months' visit to the Quaker City.

One frequently sees in Italy on a barber's sign, "Corns cured here, and teeth pulled and filled;" *i. e.*, they pull the teeth and fill a bucket with them. In Switzerland I have seen added to the above accomplishments, "Photographs taken here."

Notwithstanding the present status of our profession in Italy I feel sure all will change for the better in the near future, for the spirit of progress has entered the Italian people in earnest.

Of all the races or peoples of Europe, I believe the Italians possess naturally, in the highest degree, the necessary qualifications for success in the dental profession. They are by nature artistic, intelligent, skillful, quick to learn, and very kind and polite.

The one great drawback to Italian dental advance (and this applies to all Europe) is the fact that college-educated men almost never enter the dental profession, but study medicine instead. They still fear that the taint of the barber or corn doctor may cling to them, and they lack the moral courage to properly prepare themselves and teach their people that it is just as honorable for an educated gentleman to practice oral surgery and dental art and science as it is to be an aurist or oculist.

Fortunately Americans are untrammelled and have no fears of ancient traditions and customs, and therefore they have progressed. But we have a host of imitators in Europe whose only claim to the title of American dentist is the name on their large sign and their "brazen effrontery." One example will suffice: An American lady in Rome, who speaks Italian well, was recom-

mended to an American dentist. She called and asked for an appointment in plain English, but the dentist asked in good Italian what she wanted. She then asked in Italian if he were an American dentist, and he replied he was. She asked where he had studied in America, and he replied "in Feeledelfee." "But," said she, "how could you understand the lectures without knowing English?" "Oh," he replied, "the lectures were all given in Latin and I know Latin." There are many D. D. S. diplomas in Italy (printed in Latin) which were never granted by any legal American dental college. It is a question, however, if these purchasers of bogus sheepskins inflict more injury on poor suffering humanity than a certain Italian monk, Fra Orcenico, in Rome, who tears out a hundred teeth a day or more. In short, dentistry as a healing art and science is not yet understood in this land of art and song. There is still a wide gulf between the dental and the medical profession, but American dentistry has thrown a passable pontoon across this gulf, and when medical men learn more of dental art and science, and dentists are obliged to learn more of the healing art, then a better day for the health and comfort of the Italian people will dawn on this fair and happy land.

J. G. VAN MARTER, B. A., D. D. S., M. A.

ROME, Italy, Oct. 22, 1888.

REVIEWS AND ABSTRACTS.

ANÆSTHETICS: THEIR USES AND ADMINISTRATION, by DUDLEY WILMOT BUXTON, M.D. B.S. P. BLAKISTON, SON & Co., Philadelphia.

This subject has received a new impetus from the few additions which have been made to it of late in the introduction, with more or less success, of new anaesthetics, but more particularly in the desire to obtain some agent which will produce a loss of sensation, without narcosis. We note the reception of cocaine by the profession.

In his preface the author says, "The introduction of anæsthetics, which has done so much to rob surgery of its horrors, alike for the patient and the operator, has created a great demand for persons capable of administering these pain-destroying agents

without unfortunately exciting, as a rule, so great a sense of responsibility in the administrator as his difficult and dangerous duties should render obligatory. It is surprising that surgeons, who have witnessed the attempts of novices to give anæsthetics, should hold any view save that *no one is capable of safely giving any anæsthetic, unless he has been carefully taught, and has obtained considerable experience* " (italics ours).

This, to our mind, is the key to the whole situation, and in which we fully concur. It is a subject of great importance, and should be more fully taught at our colleges, especially in its clinical relations.

In the book under review, nitrous oxide gas is specially dwelt upon, and its importance in dentistry and dental operations set forth clearly and plainly, and his counsels are good. The dangers are fully dwelt upon, together with their proper treatment.

The mooted question of administering nitrous oxide gas to pregnant women is too important to receive so slight a notice.

On the subject of ether, Dr. Buxton says that "it is the safest known agent for the production of prolonged narcosis."

He gives a summary of cases when ether should not be used, and in it he includes renal disease, as pointed out by Dr. Emmet. He should follow it up, and give the advice, always to make an urine analysis before administering ether. As ether reduces the bodily temperature in prolonged narcosis, he fails to mention taking the temperature then as a safeguard.

He says that ether can not be properly given on a folded towel, but should always have an impervious covering, e. g., a rubber bag. He considers inhalers better, and Clover's portable one the best. The various inhalers are fully described.

Under the head of "dangers" he does not mention the hazard in the variations in the strength of the vapor, as when fresh ether is added. Nor from partial anæsthesia, especially when the surgical procedure is sharp and sudden, as in the extraction of teeth. We know of a fatal case where ankylosis was being broken up.

Some patients can not be etherized, as we find mentioned by Keppeler. He omits this, but speaks of Keppeler's experiments with morphine and ether, and says that he was unable to narco-

tize patients with ether subsequently to hypodermic injections of morphine. We have found it otherwise.

"Cough" is often produced by ether, which is irritating to the bronchial mucous membrane, but when administering chloroform, it shows that the vapor is too concentrated, and more air must be allowed to enter.

On chloroform his expressions are clearly given, and his statements come from a practical acquaintance and familiarity with his subject.

On the subject of anæsthetic mixtures, I wish to quote Reeve: "Since all mixtures containing chloroform are dangerous, as is shown by experience, are we justified in using them?" The author speaks highly of the "A. C. E." mixture, and places it between ether and chloroform. It no doubt has a special field.

On the mixtures of ether or chloroform with the alkaloids, we hoped to find a more general condemnation of the practice. For in cases of accident we have not one agent to combat, but two. The alleged advantages will not counterbalance the dangers attendant upon their employment.

Nitrous oxide gas, followed by ether, Dr. Buxton considers the best method of producing general anæsthesia.

The book is well written, his expressions are clear, and his teachings orthodox. And we can commend this manual to both students and practitioners, and know that the time devoted to a careful perusal of it, will be profitably employed.

Dr. Buxton is a well known administrator of anæsthetics in the London College Hospital, and Dental Hospital, London.

It is printed on good paper, in clear type, and is attractively bound.

J. H. W.

ARTIFICIAL CROWN AND BRIDGE-WORK. By GEO. EVANS.
Pages, 263, with 500 Illustrations. The S. S. White Dental Mfg. Co., Publishers.

This handsome volume, so copiously illustrated, is the first attempt to produce a separate work for the guidance of the crown and bridge-worker. We have examined the work with some care, and have no hesitation in saying that it must prove of great assistance to every dentist engaged in practice, even if he does not engage in the work of making crowns and bridges. The author is to be congratulated for his painstaking care in pre-

sending every known practical method connected with the art of crown and bridge-work. The publishers have performed their work well. Many of the illustrations having previously appeared in the *Dental Cosmos*, will not be new to the readers of that publication, but this work will give them a more extensive circulation in a more permanent, durable and condensed form.

BOOKS RECEIVED.

TRANSACTIONS OF THE IOWA STATE DENTAL SOCIETY, 1886-7-8. Many of the papers in this volume have already appeared in various dental journals.

TRANSACTIONS OF THE ILLINOIS STATE DENTAL SOCIETY, 1888. Garrett Newkirk, Secretary.

TRANSACTIONS OF THE NINTH INTERNATIONAL MEDICAL CONGRESS, Washington, D. C. Five volumes. John B. Hamilton, M.D., Editor.

PARREIDT'S COMPENDIUM OF DENTISTRY. By Jul. Parreidt. Authorized translation by Louis Ottogy, D.D.S. Annotated by G. V. Black, M.D. 1889. Chicago: W. T. Keener. Price, cloth, \$2.50.

DENTAL COLLEGE COMMENCEMENTS.

UNIVERSITY OF CALIFORNIA—COLLEGE OF DENTISTRY.

TO THE EDITOR OF THE DENTAL REVIEW:

Dear Sir:—The seventh annual commencement exercises of the College of Dentistry of the University of California were held at Metropolitan Hall, San Francisco, Dec. 4, 1888, at 8 o'clock, P. M. The address for the faculty was delivered by Prof. A. A. D'Ancona, M.D. The degree of Doctor of Dental Surgery was conferred by Horace Davis, A.B., president of the University. The number of matriculates for the session was twenty-nine. Graduating class: Ira Hart Chapman, Samuel Alston Hackett, Frank Lewis Hultberg, Philander McCarger, Joseph Pfeister, William George Shankey, Edward Nelson Short, Charles Sawtelle Weston. Respectfully yours,

C. L. GODDARD, Dean.

MEMORANDA.

Dr. J. G. Templeton, of Pittsburgh, was in the city in November.

Dr. Von Guérard has received the Turkish order of the Medschidje.

Dr. A. J. Harris has associated with him in business Dr. B. S. Palmer.

Parreidt's Compendium is likely to have a large sale among medical students.

Dr. John B. Hamilton is to be the new editor of the *Journal of the American Medical Association*.

Persons having old dental books for sale or exchange are invited to address J. W. Wassall, 203 Dearborn avenue, Chicago.

Julius Parreidt, of Leipzig, Germany, has been presented with a gold medal by the Central Association of German Dentists.

January 1, 1889, the *Dominion Dental Journal*, a quarterly, will make its bow to the dental public. Dr. W. Geo. Beers is the editor.

M. Morgenstern, of Baden-Baden, Germany, is visiting in the city. Dr. Morgenstein was formerly editor of the *Centralblatt für Zahnheilkunde*.

The Odontological Society of Pennsylvania celebrated its tenth anniversary on December 12th and 13th, 1888. Drs. J. N. Crouse, W. B. Ames and other Chicago dentists were present.

Someone in Texas requests that suitable teeth for Implantation be sent to him and he would accept them, which is a generous offer. Any suitable teeth sent to Lock-drawer 144, Chicago postoffice, will be paid for at the rate of fifty cents per tooth.

Mr. E. Lloyd Williams, M. R. C. S., L. D. S. is to be the new editor of the *Dental Record*. Our readers have had an opportunity once or twice of reading his productions but where or under what *nom de plume* we will not tell. Welcome to journalistic work, Mr. Williams.

Mr. J. J. Andrews, of Belfast, Ireland, recommends for anchorage screws, to be used for retaining gold and amalgam fillings, and crowns, the long steel screw used for hinging the ring on a watch. They have a large head, a sharp thread, and can be cut to any length. Ask your jeweler for "Bow-screws." They are efficient and inexpensive.

The Independent Practitioner hereafter will be known as the *International Dental Journal*. When it comes out as the exponent of the thoughts of the best minds of two or more continents, we sincerely hope that it will cease to call attention to matter in its advertising pages. The space belongs to the subscriber and not to the advertiser.

Dr. James W. Cormany has devised a set of three tongue depressors and napkin-holders which will be found very useful in making short operations such as changing dressings in teeth, the insertion of temporary fillings, and also for making fillings in deciduous teeth. The price of the set is \$1.25, and may be had by addressing Dr. Cormany at Mt. Carroll, Illinois.

The Odontographic Society, of Chicago, elected officers for the ensuing year on December 10, as follows: President, H. H. Wilson; Vice-President, J. E.

Keefe; Secretary, Geo. N. West; Treasurer, J. Austin Dunn; Board of Directors, H. H. Wilson, G. N. West, J. E. Keefe, F. H. Zinn and T. A. Broadbent. Hereafter the meetings will be held in the Commercial Hotel.

ANTRAL ABSCESS.

The following directions were given to a *patient* by a dentist who was treating an abscess of the antrum! "Inject thoroughly with peroxide of hydrogen, then touch up with bichloride of mercury, 1-500, then take a small wad of cotton saturated in solution of aconite and iodine covered with iodoform and place in wound." Selah!

Dr. E. M. S. Fernandez gave an interesting lecture before the Chicago Dental Society on Tuesday evening, December 5. His subject was "Blow-pipes and Soldering." He described a method of making a seamless crown and stated that jeweler's borax would be found much better than the ordinary commercial article. His remarks were listened to with great interest. As he spoke from notes we are unable to present them in full.

Twice, recently, have we looked with satisfied eyes upon gold fillings made by American dentists who flourished in the early part of the century. In one instance the operations were done fifty and in the other fifty-eight years ago. The fillings are in service and in excellent condition, being in both crown and approximal cavities. This is eloquent testimony to the value of dental operations to humanity, as well as to the skill of our venerated fathers.

FOR PERIDONTAL INFLAMMATION.

R

Iodine cryst.	gr. v.
H ₂ S O ₄	min. xv.
Potassi Iodidi,	gr. x.
H ₂ O	min. xxx.

M. Sig. Dilute with water as required.

The dose is proposed by a correspondent.

CALIFORNIA STATE DENTAL ASSOCIATION, SAN FRANCISCO, NOV. 13, 1888.

The following were elected officers of the California State Dental Association, at their last annual meeting, for the ensuing year, viz: President, W. DeCrow, San Jose; Vice President, T. N. Iglehart, San Francisco; Secretary, W. A. Knowles, San Francisco; Cor. Secretary, W. Z. King, San Francisco; Treasurer, S. E. Knowles, San Francisco; Librarian, L. Van Orden, Jr., San Francisco.

Respectfully yours, W. Z. KING, Cor. Sec.

Drs. C. R. E. Koch and C. S. Smith on the part of the State Board of Dental Examiners and Drs. Smith, K. B. Davis, Koch, Henry, and Jennelle, of the Illinois State Dental Society, have issued a circular asking for suggestions relative to amending the Dental Law of the State, and such criticisms or objections as members of the profession may desire to make, concerning the law as it now stands. The attention of members of the profession throughout the State is urgently commended to the questions asked by these committees, as the Legislature will meet in January, 1889. If anything is to be attempted, no time should be lost in getting all the suggestions together at once.

Dr. H. J. McKellops, of St. Louis, has an improved root canal broach. It is made from gold wire which has been alloyed with platinum (to give stiffness). No. 25 standard wire gauge is the size used. The broaches are made by filing down suitable lengths to a taper point, in the same manner that the piano wire broach is made. The advantages claimed for the platinum gold broach are that it is not corroded by medicaments; and in case a bit is twisted off in a canal, it being incorruptible can do no harm, and may be allowed to remain. It may also be an adjunct to secure a perfect filling in a very fine or tortuous canal. When the gutta percha solution has been thoroughly pumped in, cut off the end of the broach and pass it up to the apex, leaving it there permanently. This is only needed where the canal is too small to receive a gutta-percha cone.

An ancient sign board from Devonshire, now in the Museum of the Odontological Society, of Great Britain, reads:

Thos Smith Glazier
Let Blood and Draw
Teeth Tea Kittles & Potts
To be Handled Heare

Another and a more poetical seeker of victims addressed Old England in this wise:

“Ye worthies of the British Nation
Attend to my new Operation
Let colts'-teeth or decayed ones come
My pinchers quick shall ease your gum”

COCAINE POISONING—AT THE CLINIC OF THE NORTHERN ILLINOIS DENTAL SOCIETY.

In the case of Mr. Reedy, about four minutes after the injection of nine minims of the four per cent. solution of hydrochlorate of cocaine the patient suddenly became pallid and in his own words “he felt a dizziness and became sick at his stomach and wanted to sleep, but by a powerful effort he aroused himself.” The muscles of his legs began to twitch involuntarily, which continued for about one hour. A profuse perspiration broke out on his face and forehead. Brandy was taken to the amount of three or four ounces. There was no mental disturbance, but the patient felt a numbness on the right side of the face. His pulse was lowered slightly, but soon became normal. The patient looked as though he were in great distress, and frequently shivered, like one being suddenly exposed to cold draughts. He did not feel the effects of the brandy and was not in the habit of taking stimulants. He had not tasted liquors for nine years. The solution was freshly prepared the day before using it.

A prominent physician of Chicago, having been interviewed on the subject of the yearly earnings of physicians in Chicago, says:

“Considerable has been published upon that point that is wide of the facts. There are, I think, not over half a dozen men whose income from their practice exceeds \$10,000 or \$12,000. They are men of the widest reputation who have been years in building up a practice among a class of people who will pay a little above the usual rates. Moreover, they are men of sufficient business ability to succeed in other walks of life. If they have grown rich it is out of shrewd investments, not practice. There are a large number who earn on the scale from, say, \$12,000 down to \$6,000. Physicians consider themselves in good practice if they collect

\$5,000 a year. There are in the city about 400 regulars or allopathic, the same number of homeopathy, and from 1,000 to 1,200 doctors of other schools—in all about 2,000. This may seem a small number for a city of nearly 800,000 people. On the contrary, it is a large number. The great majority earn far below \$5,000. many make less than \$1,000 per annum. Of course, energy, push and close attention to work will earn a man a livelihood in medicine. Many young men who are turned out by the colleges—about 400 were given diplomas this year by our local institutions—find this out and quit the profession for something else, or remaining in it suffer the disappointments of years of waiting. There is in this city one really good physician who runs an elevator in a hotel at night to earn his bread."

OBITUARY.

Δ Σ Δ

DIED.—November 16, 1888, at Bellefontaine, Ohio, J. G. EMERY, D.D.S.; age, 25 years.

We are pained to announce the early demise of one of our bright young men, just on the threshold of full manhood. Dr. Emery was a graduate of the Chicago College of Dental Surgery in the year 1886, and had since graduation been associated with Dr. O. Wilson, of Aurora, Ills. His death occurred while on his wedding trip, having been married but a few weeks when stricken with typhoid pneumonia, from which he died after a few days' illness. Our sincere sympathy is extended to the bereaved wife and afflicted parents.

Dr. W. B. Knapp, of Fort Wayne, Ind., is suddenly called upon to mourn the loss of his wife, who died in Nashville, Tennessee, December 5, 1888.

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